

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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LONDON, SATURDAY, MAY 20, 1848.

[PRICE 6D.]

WHEAL MARTHA MINE.—IMPORTANT SALE OF MINE MATERIALS, POWERFUL STEAM-ENGINE, FOUR WATER-WHEELS, &c.—TO BE SOLD, AT AUCTION, by F. A. DAVIS, on Tuesday and Wednesday, the 23d and 24th of May, 1848, each day at Eleven o'clock in the forenoon, at WHEAL MARTHA MINE, at LUCCOCK, in STOKECLIMISLAND, about five miles from Tavistock, and six miles from Calstock and Cotehill Quays, on the Tamar, the whole of

VALUABLE MATERIALS OF THE SAID MINE:

COMPRESSING

1	WATER-WHEEL, 40-feet diameter, 4-feet in breast, with cast-iron ring sockets and cylinder ends.
1	Ditto MACHINERY WHEEL, 30-feet in diameter, 2-feet breast, with wood ring iron socket and cylinder ends, with a crusher and whin attached.
1	Ditto, 30-feet diameter, 3-feet breast, with cast-iron ring sockets and cylinder ends.
25	STAMPS WHEEL, 12-feet diameter, 4-feet breast, calculated for 12-heads.
25	9-feet 15-inch pumps
27	9-feet 11-inch ditto
60	9-feet 9-inch ditto
15	9-feet 7-inch ditto
3	9-feet 10-inch working barrels
3	9-feet 8-inch ditto
1	11-feet 10-inch ditto
1	9-feet 6-inch ditto
6	6-feet 8-inch doorpieces
1	4-feet 10-inch doorpieces and door
2	6-feet 10-inch ditto
1	6-feet 13-inch ditto
1	4-feet 7-inch ditto
1	9-feet 10-inch plunger-pole, with 11-inch case, stuffing-box, and gland
1	A large quantity of capstan and whim-chain.
About 24 tons strapping-plates: 5 loads new timber.	
A large load of guinea, with needles and brasses to fit.	
Main balance-rod, other rods, with saddles and brasses.	
Fathoms 11-inch square main and balance ditto	
Fathoms 3-inch iron flat-rods, pulleys, and stands.	
40	Fathoms 2-inch ditto ditto.
3	A large quantity bucket-rods and buckets; a great many capstan & whim-sheaves.
3	Very superior capstans and shears, with pulleys, complete.
150	Fathoms 11-inch capstan-rope; about 25 fathoms of 5½-inch rope.
80	Fathoms whale-rope; 2 horsewhines, with puppet-heads and pulleys.
Bolts, pins, braces, and stands; a power wrench and chain.	
Fathoms ladders; engine counter by Brown.	
220	A quantity of tramroad iron, cisterns, dividers, and casings, with the materials of several work-houses, drawing-sheds, floors and louvered whins, and machine kibbles, 1 40-inch smiths' bellows, 1 36-inch ditto 2 anvils, vice, mandrel, smiths' horse, crane, screw stock, plates and taps, large and small beams, scales and weights, tram wagons, a quantity of new and old brasses, bell and stand, several tons of new and old iron of various sizes, copper powder cans, water barrels, nails, shovels, hammers, 2 sets blocks, shaft gig, wheelbarrows, smiths' and miners' tools in great variety, hand screws, 2 winches, carpenter's benches, saw-pit frame, planks, a miner's dist., thondolite, and set of mathematical instruments, &c.—Also, a very powerful STEAM-ENGINE (nearly new), on the combined principle of Messrs. Harvey and Co., from the drawings of Mr. William West, with 60 and 32-inch cylinders, equal to 141-horse power, in excellent condition, together with the boiler about 9 tons.
Catalogues will be ready, and may be obtained at the office of the auctioneer, in Tavistock, on and after the 16th May next, by personal application, or letter pre-paid, from which time the whole will be on view.	
The above materials are exceedingly numerous, and of first-rate quality, having been selected at establishments of known celebrity, regardless of expense, and are therefore well worthy the notice of mine agents and dealers generally.	

Refreshments will be provided.

County Fire and Provident Life Offices, Tavistock, April 18, 1848.

COMBMARTIN MINES.—IMPORTANT AND VALUABLE MINE MATERIALS, COUNTING-HOUSE, FURNITURE, LAND, &c., near ILFRACOMBE, NORTH DEVON.—TO BE SOLD, BY AUCTION, by Mr. G. HEARSON, Wednesday and Thursday, the 24th and 25th days of May next (if not previously disposed of by private contract, of which due notice will be given), all the

STEAM-ENGINES, MACHINERY, MINING MATERIALS,

AND OTHER STORES,

TOGETHER WITH THE LANDED PROPERTY,

Belonging to the Combmartin Leander and Silver Mining Company—consisting of ONE excellent 50-inch cylinder PUMPING-ENGINE, 9-feet stroke in cylinder, and 8-feet stroke in shaft, with two boilers, together about 24 tons.

ONE excellent double-acting STEAM-WHIM, 14-inch cylinder and boiler, about 5 tons, with crushing apparatus, stamps, cast-iron axle, heads, and lifters, complete.

ONE 7-inch PRESSURE-ENGINE, complete.

ONE 26 and 50-inch Sime's combined CYLINDER PUMPING-ENGINE, with one boiler, about 10 tons, 9-feet stroke in cylinder, and 8-feet stroke in shaft.

Several hundred fathoms of 7, 8, 9, 10, 11, 12, and 14-inch PUMPS, flat-rods and capstan-

ropes, of various sizes, steam-whim and horse-whim chains, and a general assortment

of mining materials and machinery.

For particulars of which, see handbills, which may be had of the auctioneer, Barnstaple.

Dated April 26, 1848.

VALUABLE FREEHOLD ESTATE.—WAINGROVE'S HALL, DERBYSHIRE, will be OFFERED FOR PUBLIC COMPETITION, by Mr. BREAREY, on Wednesday, the 1st day of May inst., at the ROYAL HOTEL, in DERBY, at five o'clock in the afternoon (subject to such conditions as will be there exhibited), all that MODERN MANSION, known as WAINGROVE'S HALL, with requisite OFFICES, COACH-HOUSE, STABLES for 10 horses, BARN, and other BUILDINGS and CONVENiences, COTTAGES for labourers, GARDENS, ORCHARDS, PLEASURE GROUNDS, and FISH-FONDS—suitable for the residence of a gentleman's family; together with the under-mentioned PARCELS of excellent enclosed arable, meadow, and pasture LAND and PLANTATIONS, adjoining and contiguous to the said mansion-house, situated in the several parishes of PENTRICH and HEANOR, in the COUNTY OF DERBY—viz.:

No. on Plan.	Cultivation.	A.	R.	P.
1	Great Wood Close	Aralbe	7	1 33
2	Plantation	—	0	3 1
3	Little Wood Close	Aralbe	1	3 23
4	Plantation	—	0	1 11
5	Far Court Close	Aralbe	3	1 15
6	Plantation	—	3	0 12
7	The Pasture	Pasture	13	2 37
8	Limekiln Close	dito	6	0 3
9	Round Meadow	Aralbe	11	0 34
10	Plantation	—	0	22
11	Ditto	—	0	2 37
12	Ditto	—	1	0 15
13	Over Willow Close	Aralbe	3	0 2
14	Plantation	—	0	22
15	Nether Willow Close	Aralbe	2	0 22
16	Joshua's Meadow	dito	4	3 25
17	Bracken Close	Pasture	11	3 31
18	Barn Croft	dito	3	0 17
19	The Hall, Outbuildings, Garden, Or- chards, Pleasure-Grounds, Lawn, & Entrance Road	—	23	2 34
20	The Wilderness	—	0	2 33
21	Broom Close	Aralbe	2	1 38
22	Common Piece	dito	0	3 33
Total		102	3 10	

The house is situated on a gentle acclivity, nearly in the centre of the estate, in the immediate neighbourhood of the Donnington Hunt, within 9 miles of Derby, 12 from Nottingham, and 5 from Alfreton; Ambergate and South Wingfield Stations, on the Midland Railway, and Codnor Park, on the Erewash Railway, are at easy distances.

The estate lies in a ring fence—is about equally in the parishes of Pentrich and Heanor—that in the latter parish being tithe free.

The land is of excellent quality, well timbered with oak, ash, larch, &c., of mature growth; and, together with the fish-ponds, pleasure grounds, and plantations, give a park-like appearance, and well-watered by never-failing springs.

The whole estate abounds with several beds of hard and soft coal, of the quality of the famous old Denby and Kilbourne Fields, as also with superior ironstone, valuable stone for building purposes, and excellent brick-clay, the situation and qualities whereof will always command a market.

A bill is now before Parliament (read a second time) to obtain an Act for making a branch from the Midland Railway to Ripley, and provision is therein made to construct a branch on a self-acting plane, about 12 chains in length, purposely to connect the estate therewith.

* A person resident at the house is appointed to show the estate; and further particulars and information may be obtained at the offices of Messrs. J. W. Bromley and Aldridge, solicitors, 1, South-square, Gray's Inn, London; or of the auctioneer, in Derby; or of Messrs. Rickards and Son, solicitors, Alfreton, Derbyshire, where maps and surveys of the estate are deposited for inspection.—Alfreton, May 1, 1848.

TO BE SOLD, the LEASE AND PLANT of IRONSTONE

AND COAL MINES, in the most productive part of the STAFFORDSHIRE FIELD.—The blast-furnaces, mills, and forges, are making iron of the first-quality.—Every economy and convenience is presented towards profitable working. Most satisfactory reasons given for the retirement of the present proprietor. For capitalists to embark in iron manufacture, it offers the most important advantages.—Apply to Messrs. Gladstone and Co., surveyors and estate agents, 115, New Bond-street.

EXTENSIVE IRON-WORKS FOR SALE.—TO BE SOLD, BY PUBLIC ROPP, within the Royal Exchange Sale Rooms, Glasgow, upon Wednesday, the 24th day of May next, at Two o'clock afternoon (if not previously disposed of by private bargain), the BLAIR IRON-WORKS, belonging to the Ayrshire Iron Company, situated in the parish of Dalry, and county of Ayr.

These works, which have been recently erected at an immense cost, consist of two blowing-engines, five blast-furnaces, workmen's houses, steam-engines for working the mines, &c., together with utensils at the pits, furnaces, &c., all in working order, and capable of producing upwards of 35,000 tons of pig-iron per annum.

One of the blowing engines, high-pressure, estimated at 90-horse power, was erected in 1841; the other, a condensing engine, was erected in 1847, and is estimated at 200-horse power, the latter being capable of blowing five furnaces, and both fitted up in the most substantial manner, and at present in the best working condition.

The furnaces have been erected with the greatest care, and are fitted with air-heating apparatus of the most approved construction. The make of each furnace has generally averaged upwards of 150 tons of iron per week, and some of them have produced 180.

There are, besides, the manager's house and store buildings, 187 workmen's houses, in a habitable state, attached to the furnaces and pits, and there are 20 partly built, which could be finished at a small additional outlay. There are also a new foundry, wright shop, fire-brick work, smithy, &c.

The MINERAL FIELDS, consist of COAL, IRONSTONE, LIMESTONE, and FIRE-CLAY, held in lease, by the company, at moderate fixed rents and royalties, all situated within easy distances of the furnaces, and for the most part have the advantage of railway communication.

The COAL-FIELDS consist of several hundred acres, of which only a small portion has been wrought. Several pits, fitted with good engines and machinery, are sunk to the coal, and partly in operation.

The IRONSTONE consists of the well-known black-band, yielding about 3000 tons of calcined stone per acre; and it has been estimated that there are 300 acres on thereby still to work—besides which, there is a large extent of clay-band ironstone, hitherto little wrought, but capable of yielding a large output. There are 15 pits, with excellent steam-engines—some of them in present operation, and others ready to resume working.

The LIMESTONE QUARRY is worked by open cast, and is connected with the works by railway.

The FIRECLAY is abundant, of excellent quality, and cheaply produced.

The Glasgow, Paisley, Kilmarnock, and Ayr Railway (extending to Carlisle), passes close to, and has connection with, the furnaces—by means of which, and others in connection with it, the produce can be conveyed to the city and port of Glasgow (22 miles off), and to the seaports on the Ayrshire coast, each within a few miles of the works.

There is a large stock of calcined ironstone, coal, and limestone on the ground, so that the works may be put into immediate operation, and, under judicious management, the manufacture of pig-iron may be carried on to the greatest advantage. The concern will be found to be well worth the attention of persons having the requisite capital, and affords an opportunity of entering into the business seldom to be met with.

MALLEABLE IRON-WORKS.—Considerable progress has been made in the erection of extensive malleable works, which, when completed, will be capable of turning out 300 tons of bar-iron weekly. The most of the necessary machinery has been prepared by the contractors; and a portion of the work could be brought into operation in a few months to produce the half of the above estimate. This work is nearly adjoining the Pig Iron-Works, and connected by railway, and will be sold either together therewith or separately.

Plans of the property and mineral workings lie for inspection at the Ayrshire Iron Co.'s office, 113, St. Vincent-street, Glasgow, where, on application to Mr. Brown, every necessary information will be afforded, and orders given for inspection of the works.

N.B.—The purchaser of these works has an opportunity of, at the same time, acquiring the Mansion-house, Lands, and Minerals of Pitcon, extending to about 216 acres, in imperial measure, and comprehending the following lands—viz.: the Three Merk Land of OVERMAINTAIN of PITCON; the Two and One-Half Merk Land, of old extent, of LINTSEEDRIDGE; 6 acres 19 fells, or thereby, of the farm and lands of MIDDLETON, situated on the east side of the high road leading from Dalry to Kilbride; and one rood and 0 falls, or thereby, of the lands of KERSELAND, situated on the north or north-west side of the water of Garnock, with the teinds, parsonage, and vicarage of said lands; together with the whole MINERALS and METALS in the several lands above-mentioned; and whose privileges and perents belonging to the same; but, excepting those eight acres or thereby Scotch measure, now belonging to the Glengarnock Iron Company, of their presently working seam of ironstone in the said lands; and also excepting the Pitcon Railway and branches, in so far as the same are within, and pass through, the said lands.

The MANSION HOUSE, which is pleasantly situated, and commands a good extensive view, is in good order and repair, and has attached to it a set of suitable and commodious offices, with walled garden, shrubbery, and pleasure-ground; and the whole are enclosed from the other portions of the estate by a high and substantially-built wall.

The LANDS (exclusive of those attached to the mansion house), let under lease, extend to about 140 acres Scotch, or thereby, and are at present held by a respectable tenant at a surface rent of £490 sterling per annum. The farm standing upon the lands is most substantially built, and in good order and repair.

The MINERALS, which have been ascertained to comprise the most valuable descriptions of ironstone, extend to about 140 acres still unworked, and are held by the Ayrshire Iron Company upon a lease, at a present fixed rent of £1000 sterling per annum; or, in the option of the landlord, at a certain lordship, which has hitherto greatly exceeded the fixed rent, and yielded a very large yearly return. Upon a moderate calculation, the black-band yields about 3000 tons calcined ironstone to the imperial acre. There are, besides, in the course of being wrought on the lands, several seams of coal and other minerals.

The Estate of Pitcon is situated near to the village of Dalry, at which there is a station upon the line of the Glasgow, Paisley, and Ayr Railway, and in the immediate neighbourhood of the Ayrshire Iron Company's Works, with which it is connected by railway communication. This property will, in consequence, form a most desirable and profitable investment to the purchaser of the Ayrshire Iron Company's Works (the Blair Iron-Works), which, along with the benefit of the mineral lease of Pitcon, are advertised to be sold by public auction, at the same time and place with this estate.

The public and parish burdens payable from the estate are small; and whether regarded as in connection with the Ayrshire Iron Company's Works, or separately, there is seldom so desirable and eligible an investment as the present offered to competition.

For further particulars, application may be made to Mr. McCollard and Mr. McKenzie, accountants, 128, Ingram-street, Glasgow; Robert McCowan, accountant, 17, Gordon-street, there; Knox and Findley, writers, 29, St. Vincent-place, there; James McCosh, writer in Dalry; or, to Douglas and Ranken, writers, 61, St. George's-place, Glasgow,

VENTILATION OF COAL MINES—BIRAM'S PATENT ANEMOMETER.—This INSTRUMENT has now been SUCCESSFULLY EMPLOYED by many eminent engineers, to whom reference can be given.

In particular, apply either to the inventor, B. Biram, Esq., Wentworth, near Rotherham; or to the maker, John Davis, Derby, manufacturer of miners'耽息, clinometers, safety-lamps, and all kinds of instruments appertaining to the engineer, are made and kept in stock.—Repairs promptly attended to.

J. DAVIS, Irongate, Derby.

ASSAYING AND ANALYSIS.—Mr. MITCHELL begs to inform the MANAGERS, &c., of MINES, SMELTING-WORKS, and MANUFACTORIES, that he still continues to CONDUCT ASSAYS and ANALYSES of all PRODUCTS, metallurgical and manufacturing, at his LABORATORY.

22, HAWLEY-ROAD, KENSINGTON-TOWN, LONDON,

to which address communications are to be forwarded.—Instruction in all branches of assaying and analysis as usual.

A DCOCK'S PRACTICAL SPRAY PUMP.—This important INVENTION having been PERFECTED, and brought into SUCCESSFUL PRACTICAL OPERATION, the PATENTEE is ready to RECEIVE, and to execute, ORDERS.—Apply to Henry Adcock, C.E., at his offices, No. 2, Morgate-street, London, where pamphlets, descriptive of the invention, may be had; at the office of the *Mining Journal*, 26, Fleet-street; and through any respectable bookseller—price 6d.

PROFESSIONAL LIFE ASSURANCE COMPANY, Connecting the Clerical, Legal, Military, Naval, and Medical professions, and holding out advantages to the public not hitherto offered by any similar institution.

Incorporated.—Capital £250,000.

Established upon the mixed, mutual, and proprietary principle.

Rates essentially moderate.—Every description of policy granted. Immediate, survivorship, and deferred annuities; and endowments to widows, children, and others.—Every policy (except only in cases of personation), indisputable.—The assured permitted to go to and reside in Canada, Nova Scotia, New Brunswick, Australasia, Madras, Cape of Good Hope, and Prince Edward's Island, without additional premium.—Medical men remunerated for their reports.—Loans granted on real or personal security.—One-tenth of the entire profits appropriated for the relief of the assured while living, and of his widow and orphans.—Annuities granted in the event of blindness, insanity, paralysis, accidents, and any other bodily or mental affliction, disabling the parties. Persons of every class and degree admitted to all the advantages of the corporation.—Rates for assuring £100 at the age of 25, 35, 45, and 55, respectively—namely, £1 14s. 6d., £2 5s. 6d., £2 4s. 3d., and £2 18s. 6d.

Prospects, with full details, may be had at the office.—Applications requested from parties desirous of becoming agents. EDWARD BAYLISS, Actuary and Secretary.

Offices, 76, Cheapside, London.

NATIONAL LOAN FUND LIFE ASSURANCE SOCIETY, 26, CORNHILL, LONDON.

Capital £500,000.—Empowered by Act of Parliament.

This institution embraces important and substantial advantages with respect to Life Assurances and Deferred Annuities. The assured has, on all occasions, the power to borrow, without expense or forfeiture of the policy, two-thirds of the premiums paid (see table); also the option of selecting benefits, and the conversion of his interests to meet other conveniences or necessity.

Assurances for terms of years are granted on the lowest possible rates.

DIVISION OF PROFITS.

The remarkable success and increasing prosperity of the society has enabled the directors, at the last annual investigation, to declare a fourth bonus, varying from 3d to 5d per cent. on the premiums paid on each policy effected on the profit scale.

EXAMPLES.

Sum.	Prem.	Year.	Bonus added.	Bonus in Cash.	Permanent reduction of Premium.	Assured Borrow.
£1000	£20	3 4	1837 15 1	£109 9 11	£16 0 4	£445 0 0
			1838 3 0	87 1 4	13 10 2	395 11 1
			1839 16 11 10	74 1 9	11 3 1	346 2 3
			1840 116 7 6	54 0 10	7 18 10	295 13 4
			1841 111 6 8	49 10 0	7 10 4	247 4 5

The division of profits is annual, and the next will be made in December of the present year.

F. FERGUSON CAMROUX, Secretary.

ON NERVOUS DEBILITY AND GENERATIVE DISEASES.

Just published, the thirty-fifth thousand, an improved edition, revised and corrected, 120 pages, price 2s., in a sealed envelope, or forwarded, post-paid, by the Authors, to any address, secure from observation, for 2s. 6d., in postage stamp, illustrated with numerous anatomical coloured engravings, &c.

MANHOOD : the CAUSES of its PREMATURE DECLINE, with plain directions for its perfect restoration. A Medical Essay on those diseases of the Generative Organs, emanating from solitary and sedentary habits, indiscriminate excesses, the effects of climate, and infection, &c., addressed to the sufferer in youth, manhood, and old age; with practical remarks on marriage, the treatment and cure of nervous and mental debility, impotency, syphilis, and other urino-genital diseases, by which even the most shattered constitution may be restored, and reach the full period of life allotted to man. The whole illustrated with numerous anatomical engravings on steel, in colour, explaining the various functions, secretions, and structures of the reproductive organs in health and disease; with instructions for private correspondence, cases, &c. By J. L. CURTIS & CO., consulting surgeons, 7, Frith-street, Soho-sq., London.

REVIEWS OF THE WORK.

We feel no hesitation in saying, that there is not a member of society by whom the book will not be found useful—whether such person hold the relation of a parent, preceptor, or a clergyman.—See, Evening Paper.

Curtis, On Manhood. (Strange)—Having for many years been the standard work on these diseases, its originality is apparent, and its pursued breathes consolation and hope to the mind of the patient.—Naval and Military Gazette.

Manhood: a medical work.—To the gay and thoughtless we trust this little work will serve as a beacon to warn them of the danger attendant upon the too rash indulgence of their passions—whilst to some it may serve as a monitor in the hour of temptation, and to the afflicted as a sure guide to health.—Chronicle.

Manhood: by J. L. Curtis and Co.—Their long experience and reputation in the treatment of these painful diseases is the patient's guarantee, and well deserves for the work its immense circulation.—Era.

Published by the authors, and may be had at their residences; sold also by Strange, 21, Paternoster-row, London; Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Robinson, 11, Grosvenor-street, Edinburgh; Berry and Co., Capel-street, Dublin; and, in a sealed envelope, by all booksellers.

Illustrated by 26 Anatomical Coloured Engravings on Steel, On Physical Disqualifications—Generative Incapacity, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamp.

THE SILENT FRIEND: a medical work, on the infirmities and decay of the generative system, from excessive indulgence, infection, and disease, of mercury, with the mode of its application, and the means of obviating certain disqualifications, illustrated by 26 coloured engravings. By R. & L. PERCY & CO., 19, Berners-street, Oxford-street, London. Published by the authors; sold by Strange, 21, Paternoster-row; Heywood, 63, and Sanger, 150, Oxford-street; Starie, 25, Tichborne-street, Haymarket; and Gordon, 146, Leadenhall-street.

PART I. Treats of the anatomy and physiology of the reproductive organs, and is illustrated from six coloured engravings.—**PART II.** Treats of the consequences resulting from excessive indulgence, and their lamentable effects on the system, producing moral and bodily weakness, nervous excitement, and generative incapacity; it is illustrated by three explanatory engravings.—**PART III.** Treats of the diseases resulting from infection, either in the primary or secondary form, and contains explicit directions for their treatment. The consequences of neglect, and of the abuse, of mercury are also clearly pointed out. This section is illustrated by 17 coloured engravings.—**PART IV.** Treats of the prevention of disease by a simple application, by which the danger of infection is obviated. This section is simple, but sure. It acts with the virus chemically, and destroys its power on the system. This important part of the work should be read by every young man entering life.—**PART V.** This is devoted to the consideration of marriage and its duties. The causes of unproductive unions are also considered, and the whole subject medically and philosophically inquiries into.

THE CORDIAL BALM OF SYRIACUM exclusively employed in treating nervous and sexual debility, impotence, &c., 11s. and 33s. per bottle.—**THE CONCENTRATED DETESSERTIVE ESSENCE**, an anti-syphilitic remedy, for purifying the blood in cases of infection, secondary symptoms, eruptions, and the absence of mercury, 1s. and 33s. per bottle.—**PERCY'S PURIFYING SPECIFIC PILLS**, 2s. 6d., 4s. 6d., and 1s. per bottle—a certain remedy in gonorrhoea, gleet, stricture, and chronic inflammation of the bladder;—Consultant fee, by letter, £1. 1s. 6d. patients, with advice, to be had at the establishment only, by which the fee, £1. 1s. is saved.—Attendants daily at 19, Berners-street, from 11 to 2, and 3 to 6; on Sundays, from 11 to 1.

Sold by Sutton and Co., 10, Bow Churchyard; W. Edwards, 67, St. Paul's Churchyard; Barclay and Sons, Farringdon-street; Butler, 4, Cheapside; E. Johnson, 63, Cornhill; L. Hill, New Cross; W. B. Jones, chemist, Kingston; J. W. Tanner, Egham; S. Smith, Windsor; J. B. Shillcock, Bromley; T. Riches, London-street, Greenwich; T. Parker, Woolwich; Ede and Co., Dorling; and John Thurlby, High street, Romford—of whom you may have the *Silent Friend*.

REMOVED TO NO. 37, BEDFORD-SQUARE, LONDON.

DR. LAMERT ON THE SECRET INFIRMITIES OF YOUTH AND Maturity.

With 40 coloured engravings on steel. Just published, and may be had in French or English, in a sealed envelope, 2s. 6d., or post-free, from the author, for forty-two stamps.

SELF-PRESERVATION: A Medical Treatise, on the Physiology

of Marriage, and on the Secret Infirmities of Youth and Maturity, usually acquired at an early period of life, which enervate the physical and mental powers, diminish and enfeeble the natural feelings, and exhaust the vital energies of Manhood; with Practical Observations on the Treatment of Nervous Debility, whether arising from these causes, close study, or the influence of tropical climates; local and constitutional weakness, syphilis, stricture, and all diseases and derangements resulting from indolence; with 40 coloured engravings, illustrating the Anatomy, Physiology, and Diseases of the Reproductive Organs, explaining their various structures, uses, and functions, and the injuries that are produced in them by solitary habits, excesses, and infection.

BY SAMUEL LA MERT, M.D., 37, BEDFORD-SQUARE, LONDON.

Doctor of Medicine, Matriculated Member of the University of Edinburgh, Licentiate of Apothecaries' Hall, London, Honorary Member of the London Hospital Medical Society, &c.

REVIEWS OF THE WORK.

"The author of this singular and talented work is a legally qualified medical man, who has evidently had considerable experience in the treatment of the various disorders, arising from the follies and frailties of early indolence. The engravings are an invaluable addition, by demonstrating the consequences of excesses, which must act as a salutary warning to youth and maturity, and by its perusal, many questions may be satisfactorily resolved, to that admit of no appeal, even to the most confidential friend."—*Era*.

"Unquestionably this is a most extraordinary and skilful work, and ought to be extensively circulated; for it is quite evident that there are peculiar habits acquired at public schools and private seminaries, which are totally unknown and concealed from the conductors of these establishments, and which cannot be too strongly reprobated and condemned. The engravings that accompany the work are clear and explanatory; and being written by a duly-qualified medical practitioner, will, doubtless, be the means of saving many a youth, as well as those of matured age, from the various evil consequences resulting from early indolence."—*Magna*.

Sold by Kent and Richards, 62, Paternoster-row; Heywood, 63, Oxford-street; Starie, 25, Tichborne-street, Haymarket; Maxwell, 113, Fleet-street; Gordon, 146, Leadenhall-street; or free by post, for 42 stamps, from the author's residence, who may be consulted personally (or by letter) on these disorders daily, from 10 till 2, and from 5 till 6.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSBING WEEK.

MONDAY	Geographical—3, Waterloo-place	1 P.M.
TUESDAY	Medical—Bolt-court, Fleet-street	2 P.M.
	Medical and Chirurgical—53, Berners-street	2 P.M.
	Civil Engineers—23, Great George-street	2 P.M.
	Zoological—11, Hanover-square	2 P.M.
WEDNESDAY	Linnæan—Soho-square	1 P.M.
	Society of Arts—Adelphi	2 P.M.
	Microscopical—21, Regent-street	2 P.M.
THURSDAY	Royal—Somerset-house	2 P.M.
	Antiquaries—Somerset-house	2 P.M.
	Royal Society of Literature—4, St. Martin's-place	2 P.M.
	Medico-Botanical—32, Sackville-street	2 P.M.
FRIDAY	Royal Institution—Albemarle-street	2 P.M.
	Philological—12, St. James's-square	2 P.M.
SATURDAY	Royal Botanic—Inner Circle, Hagnet's-park	2 P.M.

INSTITUTION OF CIVIL ENGINEERS.

May 16.—JOSHUA FIELD, Esq. (President), in the chair.

No paper was read, in order to afford time for discussion on Mr. Gooch's paper, "On the Resistance of Railway Trains at different Velocities," which was read at the meeting of April 18. The principal speakers were Meers, Brunel, Gooch, Bidder, Locke, Harding, and Russell, and their arguments were necessarily so complicated by calculations, as to render it difficult to convey, within reasonable limits, even an outline of the discussion.

It was contended, on one side, that the subject had been so treated in the paper as to make it almost a question of the comparative gauges; that the experiments upon which the arguments were founded could not be received as applicable to railways in general, inasmuch as it was presumed from the statements that the portion of the line was selected as being in the best working condition; that the engine and the carriages were also picked as being in the best order; and that, therefore, the results were due to these peculiar circumstances, and not to the ordinary working state of the train; that the amount of resistance, arrived at by the committee of the British Association, by projecting trains of carriages down inclined planes was nearer the truth than the expression of resistance arrived at with the locomotive and the dynamometer; that the tables were partly made up from the actual results of the experiments, and by using Mr. Harding's formula, which had been repudiated in other cases as incorrect; that the greater weight of the trains in the late experiments, as compared with those of the British Association, &c., reduced the value of the deductions; that the atmospheric railway could alone give the resistance due to the frontage, which was not given when a locomotive was used, as it covered a portion on the carriage frontage, and the dynamometer being behind the engine, the resistance of the train of carriages alone could not be arrived at, and that the valuation of the pressure of the wind upon the train at various angles was not satisfactory. Such was the general tenor of the arguments; and on the other side it was urged, that Mr. Gooch had endeavoured, as much as possible, to avoid introducing in any degree the question of the gauges, and to give the actual results of the experiments, in order that every person examining them might draw his own conclusions; that the portion of the line on which Mr. Gooch's experiments were tried was not selected for its good condition; that it was only fixed upon by Mr. Brunel himself the night previously to the experiments, and was not that part which had been originally intended to be used; that the engine and carriages were such as could be spared from the working stock, and were not picked—*i.e.*, fact, that they were not the best of their class; that, therefore, the results were not due to peculiar circumstances, but were those of the average working of the line; but that even had the line, engine, and carriages been selected, engineers would, from the results, have been able to make allowances for other cases, and that it was believed that in descending Wootters Basset incline by gravity, without the aid of an engine, a greater velocity had been attained than the maximum recorded in the experiments of the British Association; that the tables were divided into columns, distinctly showing what resulted from experiment, and what from the use of formulae; that it was impossible with engines of ordinary weight, as now constructed, with an ordinary train, to limit the experiments to such small weights as had been formerly used; that in all cases the surface of the locomotive was allowed for in calculating the frontage resistance; that it was expressly stated in the paper, that the apparatus for the wind gauge was not so satisfactory as could have been desired, and therefore its results were kept separate in the table; that Mr. Gooch had not intended to cast any reflections upon the former experimentalists, but merely to point out the errors into which he thought they had fallen, and to induce, by his experiments, others which should fix more certainly the amount of resistance; this, it was still contended, was less than had been formerly stated, and, although other experiments would be necessary to set the question completely at rest, it was unanimously agreed that Mr. Gooch's experiments and paper were very valuable contributions, and it was hoped he would continue his observations on this most interesting subject.

The paper announced to be read at the meeting of Tuesday, May 23, was "On the Principles of the Construction of Ventilating Water-wheels," by Mr. W. Fairbairn, M.I.C.E.

The president's annual conversation was announced to be held on Tuesday evening, May 20, at the house of the institution, 26, Great George-street, Westminster; and the members were requested to use their influence in procuring good models and works of art for exhibition on that occasion.

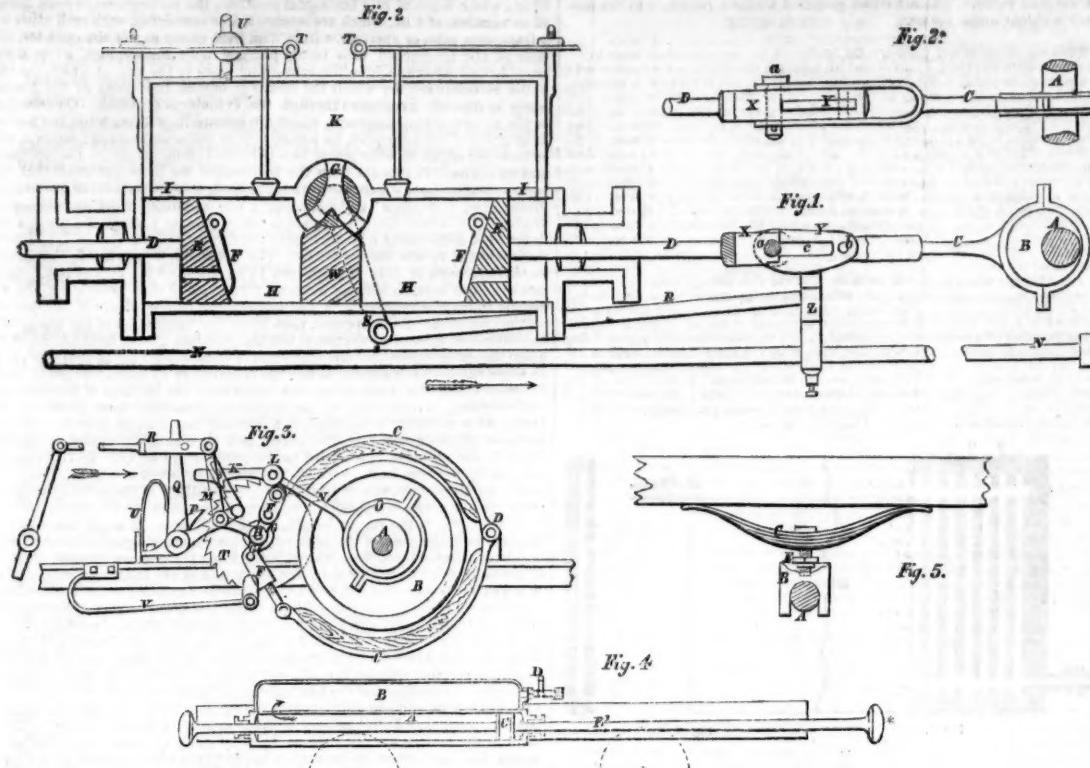
SOCIETY OF ARTS.

May 17.—J. WEBSTER, Esq., F.R.S. (Vice-President), in the chair.

The second part of Dr. Potts's pneumatic apparatus for sinking hollow and solid piles, with a view to the formation of the foundations of light-houses, and beacons, was now gone into, and the entire of this important subject brought to a conclusion.

In following up the description of Dr. Potts's paper on pile driving, by pneumatic pressure, an interesting discussion ensued, in which Dr. Potts, Mr. Russell, and others took part, on

PREVENTION OF RAILWAY ACCIDENTS.



The means for avoidance of those dire catastrophes which are so frequently occurring upon the various lines of railway in this country, is a subject that has engaged the attention of the public for some time past; and ever and anon have we had some new claimant appearing, who demands the palm of victory, as the vanquisher of the difficulties and dangers which beset railway travelling; yet, although many ingenious, and, in some respects, highly meritorious plans have been, from time to time, developed, still none of them have hitherto shewn themselves of that thoroughly practical character that impresses the mind with a distinct idea of perfection attained. The invention we would now introduce to the readers of the *Mining Journal*, is one recently patented and specified by Mr. LANE, the eminent brewer of Liverpool, and which, as far as we could judge, appears to be as near perfection as can well be conceived; and we form our judgment after having visited the patentee's establishment at Liverpool, and witnessed several experiments on a line of rails of considerable extent he has had laid down, upon which runs a perfect working locomotive, capable of carrying upwards of two tons weight, to which these improvements are attached, as also to trucks connected thereto, for the purpose of conducting such experiments. As the adoption of this invention would not be an expensive matter, and would certainly prevent the recurrence of such fatal accidents as those that recently happened on the North-Eastern and Great Western Railways; and as, in spite of all opposition, the present system of keeping the various lines of railway without proper safeguards, must at last, when the evil has arrived at the culminating point, come to be corrected by legislative enactments, we think railway boards will see that it is their own interest, as well as that of the public at large, to adopt an invention possessing such advantages as that of Mr. Lane's.

The experiments, which were of the most satisfactory character, were conducted in the following manner:—The steam having been got up, the engine, with its tender and complement of water, four men and two trucks, passed along the line at the rate of about 20 miles an hour, for the purpose of testing the efficiency of the new "break" apparatus, for retarding the motion of the carriages and engine; and, upon a conventional sign from us, the man put on the break, without shutting off the steam; when, to our astonishment, the whole train was brought to a stand-still within a few feet—the peculiar feature of this break consisting in locking all the wheels of each carriage to which it is attached, at the same instant of time, by the means, and in the manner, hereinafter described and represented by the accompanying diagrams.

The next experiment tried, was to test the efficiency of the buffering apparatus, constructed upon an entirely new principle, which, although very simple, was infallible in its action, and, in our opinion, possesses the following advantages over the apparatus heretofore employed for that purpose:—In the first place, the buffer-rods are placed along the centre, and beneath the framing of each carriage, instead of at each corner, as usually practised, whereby the rocking motion of the carriages is considerably diminished. In the next place, the space usually occupied by the head of each buffer, and that portion of the rod which protrudes beyond the end of each carriage framing, is entirely dispensed with, and the framing of the carriages brought sufficiently near together to clear each other—the position of each carriage being, at all times, the same as when first coupled together, from the circumstance of the buffering apparatus acting independent of the carriages—that is to say, without altering the relative positions of them to each other. The effect of this buffering apparatus was tested by running the engine and load, at the top of her speed, against a strong oak post, securely fixed at the end of the line of rails; but the effect of the concussion was entirely destroyed by the buffering apparatus, the reaction of the train being very gentle. It should be observed, that the steam was kept full on during this experiment. This is effected by the means, and in the manner, hereinafter described and represented by the accompanying illustrative diagrams. Another feature of this invention consists in a simple mechanical contrivance, for adjusting the height of the body of railway carriages in accordance with the weight which each one has to carry, whereby the buffers may, at all times, be maintained in the same line, or nearly so, and by which the riding of the buffers will be considerably diminished. The whole of the experiments, which were repeated several times, were, in each instance, equally successful, and elicited considerable approbation from those present, who were principally engineers of experience; but, in order that this invention may be rendered more intelligible to our readers, we subjoin the following description of the illustrative diagrams of the mechanical arrangements, which the patentee has, up to the present time, found best calculated for carrying his invention into practical effect:—*Fig. 1* exhibits a side elevation of one arrangement of parts, constituting an improved break; *fig. 2* is a longitudinal and sectional section thereof, showing the internal arrangement of the parts; *fig. 3* is another arrangement of break; *fig. 4* is a longitudinal and vertical section of the buffering apparatus before mentioned; *fig. 5* is an elevation of a bearing spring, showing the mode of adjusting it to the carriage framing.

The description of the break, exhibited at *fig. 1*, is as follows:—A, A, are the axles, upon which the wheels are fixed; B, B, eccentrics, one of which is placed upon each axle, or it may be upon one of the axles only; these eccentrics are furnished with rods, C, C, which are connected to each of the piston-rods, D, D, by a pin, as shown; E, E, pistons, fixed upon these rods, and furnished with clacks, F, F, for the purpose hereinafter mentioned; G marks a three way cock, ground air-tight into a seat, formed in the cylinder, H, for its reception—such cock being for the purpose of establishing a communication between the cylinder, H, and the chamber, K, and openings, I, I, or between the back and front of the piston, in which state the apparatus is when out of action; there are rods, for supporting the cylinder, and other parts, in connection therewith; these rods pass around the axles, A, A, and are secured at their ends to cross pieces, attached to the axle stays; N, N, is a buffer rod of wrought-iron, of the same length as the carriage; O, O, buffer heads, fixed thereto; P, P, guides, for supporting and maintaining the buffer rod in its proper position; Q, a pin, for connecting one end of a link, R, to the buffer rod N—the other end of said link being connected to an arm, or lever, S, fixed

to the three-way cock, G; T, T, are spring valves; U, an opening for charging the chamber, I, and cylinder with water; W, a division-plate. It will be seen, upon referring to *fig. 1*, that the eccentric rod, C, is formed forked at one end, and that there is a pin, a, passing across it; and upon this pin there is placed a slotted piece of metal, X, which is fixed to, or formed upon, the end of each of the piston rods, D, D, and connected to the piece, X, by a pin, b; there is a tappet piece, Y, which is acted upon by the tappet, Z, fixed to, or upon, the buffer rod, N. The *modus operandi* of this arrangement is as follows:—Assuming each of the pistons, D, D, to be in the position exhibited, and the buffer heads of each separate apparatus to be in contact, it will appear evident that the rotation of the running wheels will cause a reciprocating movement of the eccentric rods, C, without moving the piston rods, by reason of the pin, a, passing along the slot, c, in the piece, Y, which is retained in that position by the tappet, Z; and the movement of the pistons only takes place when the end of the buffer rod (which protrudes some distance beyond the framing of the engine) comes into contact with any obstacle—the effect of which is, to move the tappet, Z, from the piece, Y, which, by its weight, will fall; and the pin, being no longer able to pass along the slot, c, will push the piece, Y, together, with the piston rod connected thereto; at the same time, the communication between the back and front of the pistons, will be shut off by the action of the link piece, R, upon the arm, S; and the water will be compressed between the clacks, F, and division-plate, W, and cause sufficient friction between that part of the rod which embraces the eccentric to lock the wheels, and thereby produce the desired effect. The arrangement of the break, exhibited at *fig. 3*, is as follows:—A, A, mark one of the axles, upon which the wheels are fixed; B, a drum, or pulley, fixed upon each axle—the said drum being embraced by bands, or straps, C, C, which the patentee lines with wood, or wood covered with copper, to ensure a firm hold, or grip, of the drum, B; these bands, or straps, are formed of two parts, and are connected together by a pin at D, and at the other ends by links, E, F, to a lever, G, which turns upon an axis, H, attached to the framing of the carriage; and, upon this axis, there is fixed a ratchet wheel, I, which is acted upon by a clawer, K, which has its fulcrum upon pin, L, in the arm, M, to which is also connected the end of the eccentric rod, N, of the eccentric, O, P, a click for taking into the teeth of the ratchet wheel, Q, a lever, which takes into a slot in the rod, R—such rod being connected by the lever, or arm, S, to suitable gearing, under control of the guard, or it may be connected to the buffer rod; U, V, are springs, for returning the parts to their original position.

The effect produced by this arrangement is as follows:—When it is required to retard the motion of the carriages, it may be effected by acting upon the rod, K, which will cause the clawer, K, and click, P, to take into the teeth of the ratchet wheel, I, when the action of the eccentric, O, will pull the clawer, and thereby turn the wheel and axis, H, and cause the straps, or bands, C, to grip firmly the drum, B, and effect the locking of the wheels. The patentee states, that this arrangement may be applied to one or both axles. The buffering apparatus, before mentioned, and represented at *fig. 4*, is arranged in manner following:—A marks a cylinder of metal, bored perfectly true, and having an opening at one end, which communicates with an air-chamber, B, of any suitable form; C marks a piston, working air-tight in said cylinder, and fixed upon piston-rods, B¹, which work in stuffing-boxes at each end of the cylinder, and terminate in buffer-heads; D, an opening for charging the cylinder with water, or other fluid, which also occupies a part of the air-chamber, B, the other portion of which is filled with compressed air by any suitable apparatus. The effect produced by this arrangement is as follows:—Assuming the piston to be at one end of the cylinder, when the apparatus is out of action, it will appear evident that, upon the buffer-head, *, coming into collision with any obstacle, it causes the water to be forced through the opening into the air-chamber, the effect of which will be to compress the air still further, and thereby to offer a formidable resistance to the shock received by the buffer-head. The last part of this invention, which has reference to the adjusting of the bearing-springs to the bodies of railway carriages, consists in so arranging certain parts, in connection with springs, that the bodies may be readily adjusted at any time, to suit the variations in the height of the buffers, so as to preserve, as nearly as possible, a horizontal line throughout the entire train. At *fig. 5*, A marks an axle; B, the axle-box; C, the bearing-spring connected to the axle-box by a stem-piece, D, which has a screw cut about it; and the lower end thereof passes through a screw-nut, or collar, E, into the axle-box; and it is by turning this nut in one or other direction, that the carriage body may be raised or lowered. The patentee states that the spring may be connected to the axle-box in the usual manner, and the adjusting screws, or stems, may be applied between the ends of the springs and framing of the carriage.

BRETT AND LITTLE'S ELECTRIC TELEGRAPH.—A lecture has been given, in the theatre, Cumberland, by Mr. Little, of the firm of Brett and Little, of London, the inventors of the Electro-Telegraphic Converser, the entire proceeds from which were given to the Whitehaven and West Cumberland Infirmary. We may remark that Mr. Little is superintending the fitting-up of the electro-telegraphic apparatus on the Whitehaven Junction Railway, which will be ready for use in the course of a few days, and is, of course, complete master of the subject he so kindly volunteered to explain and illustrate. Robert Falcon, Esq., M.D., was called to the chair, and briefly introduced Mr. Little to the notice of the audience. Mr. Little commenced his lecture by explaining the nature of electricity, and afterwards proceeded to point out the peculiarities of the apparatus now in the course of erection on the Whitehaven line, and the advantages he conceived it possessed over other telegraphic devices, especially in regard to mechanical contrivances, which, he clearly demonstrated, were improvements on the mode of fitting-up for general use. At the close of Mr. Little's very interesting lecture, the thanks of the company, on the motion of Mr. Clarke, surgeon, seconded by Mr. Fiddler, surgeon, were cordially voted to him for his gratuitous services, and for the entertainment he had afforded all present. The gross receipts, amounting to upwards of £10, were given to the infirmary, without any deduction.—*Cumberland Paquet*.

BROWN AND CO.'S PATENT CELLULAR PLATES.

The economy of fuel and the application of steam are subjects which must ever be considered as of primary importance, whether as affects the saving attendant upon the one in a pecuniary sense, or the power acquired by the other, which is daily demonstrated by the results of our steam navigation and locomotive engines. It is not necessary that we should recur to the evidence of Mr. R. Stephenson, C.E., in the House of Commons, some 18 or 20 years since, as to the capacity of a locomotive, which he ventured to state might travel at 14 or 16 miles per hour without danger, although 60 to 70 miles have since been achieved; while by the application of steam to nautical purposes, 16 to 17 miles per hour have, we believe, been lately done by the Government steamer (the *Banshee*) between Holyhead, or Liverpool, and Kingstown: we purpose, however, on the present occasion, confining ourselves to the results attendant on the introduction of hot water through metal plates by way of orifices, or cells, connected with each other, whereby not only is a heat equal to 500° acquired, but the consumption of fuel rendered comparatively insignificant. That our readers may fully comprehend the patent under notice, and which we will endeavour more fully to describe, as the results of personal observation, we will at once proceed to give the specification of the patentee, which is as follows:—

SPECIFICATION.

The first of my improvements consists in forming cast-iron or other metallic tubes for containing or conveying fluids, in a heated or other state, in manner following:—To form a single tube, I take, in the first place, a pipe with overlap joint, formed of perforated block-tin or sheet-iron, and of diameter equal to the inside diameter of the intended tube. I coat this pipe, if of iron, with tin, or other metal, to prevent oxidation, and then fill it with loam, or compressed sand, to give it sufficient strength and firmness. I next fix this pipe in a proper cylindrical mould, of the usual construction, and pour cast-iron or other metal over and around it to the required thickness to form the intended tube. When the metal has cooled, and been cleaned of the loam or sand, it will be found to be perfectly incorporated with the perforated pipe, and to form with it a tube having a very uniform and smooth internal surface. Or, I sometimes prepare two such perforated tubes, of different diameters, but of equal lengths, so that one being fixed within the other in a proper mould, the inner tube being filled with compressed sand, and the outer one surrounded with the same material, melted metal may be poured between the two tubes, so as to unite therewith. By these means, tubes of any required dimensions may be formed, without the necessity of employing core bars in the usual manner.

My second improvement consists in the construction of tubular plates of cast-iron, or other metals, such plates being of much greater lengths and breadths than thickness, and having a series of parallel tubular passages running through them (contiguous to each other), either longitudinally or transversely. Each of the said passages is made to communicate with two or more cross-tubes or passages of a larger kind, projecting either above or underneath the said plate, but all formed together in one casting. This effect is obtained by connecting together any number of parallel cores of the usual construction, with two or more cross cores, their extremities being supported in proper casting frames or boxes of the usual kind, and melted metal cast over them to the required thickness, which will be regulated by the mould or pattern used. On the core bars being afterwards withdrawn, the apertures at the end of the main passages are then tapped, and screwed, and plugged up, so as to render the same steam and water-tight. The open ends of the cross passages may have flanges cast to them, with bolt holes formed thereon, so as to facilitate their union with other tubular plates, or for allowing plates of metal, corresponding with the said flanges, to be screwed or bolted thereto, by means of nuts and bolts, with rings or washers placed between them, either for stopping up their end apertures, or for uniting pipes thereto for supplying the passages with steam or other fluids for heating the same, as hereafter described. In heating these plates with very high-pressure steam, I propose to make the end openings of these cross passages of a circular shape, with conical or other shaped circular cavities around or within the same, and with corresponding protuberances to each other, either longitudinally or transversely. 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The open ends of the cross passages may have flanges cast to them, with bolt holes formed thereon, so as to facilitate their union with other tubular plates, or for allowing plates of metal, corresponding with the said flanges, to be screwed or bolted thereto, by means of nuts and bolts, with rings or washers placed between them, either for stopping up their end apertures, or for uniting pipes thereto for supplying the passages with steam or other fluids for heating the same, as hereafter described. In heating these plates with very high-pressure steam, I propose to make the end openings of these cross passages of a circular shape, with conical or other shaped circular cavities around or within the same, and with corresponding protuberances to each other, either longitudinally or transversely. 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or more plates are introduced in baking, or as adapted to culinary purposes generally, or for the purposes of evaporation, and, indeed, to anything where an equalisation of heat is required, up to a temperature of 500° . In the first instance, we have a cylinder (say) 12 in. in diameter by 24 in. in length, which is placed in a vertical position—the coke, which is the charge of the furnace, being placed in the centre, to a depth of some 4 to 5 in., so as to heat the cylinder, which is open at top. This cylinder is composed of cast-iron, of about 2 in. in thickness, being perforated by about 16 holes, or cells, of $\frac{1}{2}$ to $\frac{3}{4}$ in. in diameter, and at about a like distance apart, which communicate with each other by a transverse passage at the upper and lower parts of the cylinder—the ends of the former being closed by screws, or plugs.

The water is, in the first instance, injected into the cylindrical cellular boiler, where it becomes heated to the required temperature, and the several plates connected therewith, to which a pipe, forms the means of communication—being also, in like manner, filled with water, by a force-pump; the hot water, so produced in the cylinder, ascending to the plates, or other apparatus through which it passes, and from which the heat is emitted; the plates used are also about two inches in thickness, and cast with cells of about $\frac{1}{4}$ in., in like manner as in the cylinder described. The water is continually in action, or flowing; for, as the heated water ascends, so it displaces the volume immediately preceding it, and, forming a circuit through the plates, returns again to the cylindrical boiler below, as already described, thus keeping up a constant circulation; the fuel used is comparatively insignificant, while the heat acquired is equal to 500° , which is the extreme named by the patentees, although it has been known to have exceeded 720° or 730° .

Having thus briefly described the nature of the patent, as applied to the several purposes for which it is calculated, we will shortly advert to one or two modes of application. In land engines several plates are introduced in the boiler, which, conveying through the passages, or cells, in the plates, the hot water, at a temperature of 500° , gives a number of surfaces laterally, from the sides of which is effected the radiation of the heat, whereby it is assumed that a saving of fuel of 35 per cent. is obtained.

As regards its application to evaporation, we may give the result of an experiment made in our presence some months since. Into a pan, 4 ft. by 3 ft., formed of the cellular plates described, 8 gall., or 32 lbs. of water, was placed, which was in a state of rapid ebullition, or at a boiling point, in four seconds, and the whole quantity entirely evaporated in less than as many minutes.

Connected with salt-works, we are given to understand that, with the plates, 12 lbs. of pure water is evaporated with 1 lb. of coke— $14\frac{1}{2}$ lbs. having been effected; while at the salt-works, the usual quantity of saline water evaporated is about 6 lbs., or one-half.

In the case of baking, we may take a printed statement now before us, as showing the results of the application of the patent at the South Dublin Union, from which it appears that formerly the oven employed gave four batches in 12 hours, which consumed six bags of coal—the cost of which was 6s.; making an annual cost of 93*l.* 12*s.*—while, by the application of the new oven, or plates, five batches have been baked in the same time—being one-fourth extra; while the fuel consumed, that of coke, was attended with an expense of only 9d. in the 12 hours, or 1*l.* 1*s.* per annum—thus effecting a saving of 8*l.* 1*s.*; while one-fifth more baking is effected; in addition to which, it is stated, that there is a saving of 2 ozs. in every 4 lb. loaf—thus a 12-bushel oven would, working 14 hours per day, effect a saving of 300*l.* per annum. We have said sufficient to excite the attention and inquiry by parties interested.

We have been induced more particularly to advert to the patent of Messrs. Brown and Co. at the present moment, from the circumstance of its having been partially applied to the patented coffee-roasting apparatus of the late Mr. Dakin, whose melancholy death arose in the course of some experiments made by that gentleman, to which we have adverted in another column. It will be seen therefore, that the accident occurred, so far as we can collect, and, indeed, as appears to us, from causes perfectly irrespective and independent of the patent under notice. This, however, we have endeavoured to explain, and must refer to the article in question for further detail, reserving until our next the evidence which may be offered at the adjourned inquest, and other observations on the subject.

FATAL ACCIDENT FROM STEAM EXPLOSION.

The adjourned inquiry into the cause of death of the late Mr. W. Dakin, who was killed on Friday, the 5th inst., by the explosion of a portion of the machinery employed by that gentleman for roasting coffee, for which he had taken out a patent, but which has not been specified, was held on Monday evening, the 15th inst., at the Parochial School-Room, Church Entry, Blackfriars.—Mr. W. M. Wilkinson was again present, to watch the proceedings on behalf of the family; and Mr. Edwin James (barrister), and Messrs. Sole and Turner, attended on behalf of Messrs. Brown and Co., the patentees of the cylindrical oven, to which the fatal accident was attributed.—The evidence given was not complete; and the inquest was adjourned until Tuesday next, when the jury will re-assemble at the London Coffee-House—much interest being manifested in the course of the inquiry, judging alone from the number of persons present; while its importance, as connected with the application of hot water under the patent, renders it one of moment, involving as it does a question of interest, affecting the economy which it professes to establish—while the safety is in itself the main feature on which the jury have to determine.

Mr. JOHN FAREY, of Guildford-street, Russell-square, was the first witness examined, who, in the course of his evidence, described the construction and dimensions of the oven, or cylinder; and, in giving his opinion as to the cause of the explosion, stated, that he believed such to have arisen from the water having a greater pressure than the metal was calculated to resist—the heat to which the water was raised being, as we understood, nearly 700° . The metal, or casting, of which the cylinder was composed, Mr. Farey described as being exceedingly porous and unsound—or, as is better understood by the term, "honeycombed." In describing this, the witness observed that, in the casting of the cylinder, the metal is poured direct from the cupola into a mould—the dross, or impure portions, of the iron naturally rising to the surface; and, as far as he (Mr. Farey) was enabled to form an opinion, it appeared to him that the portion of the cylinder which had given way, and which was the cause of the accident, was the upper part of the casting, which, for the reasons he had assigned, would naturally be the least perfect, although such must not be assumed as invariably the case—indeed, it was usual to avoid any failure in the casting, or its being rendered imperfect from such cause, to cast cylinders of thin description of a greater length than that required—so that the extreme end might be cut off, and thus get rid of the impure metal, or faulty casting.

In reply to a juror, as to whether, in his (Mr. Farey's) opinion, the iron used in casting the cylindrical oven was the best pig-iron, that gentleman stated his perfect conviction such was not the case—but, on the contrary, that the iron used was "very bad," particularly that in the section, or part, where the fracture took place. He did not consider the casting itself so strong as it should have been—portions of it, he had no hesitation in saying, were altogether defective, and contained small grains, almost like shot. Two plugs, which are used in closing the apertures formed by the tubes passing through the plates, had been forced out by the explosion. One of the tubes, or passages, referred to, had been stripped to a trifling extent, but not so much so as would warrant the inference being drawn, that it had been so affected before the explosion of the cylinder, or oven, took place. From the circumstance of the screws, or taps, being necessarily screwed in very tight, and being slightly tapered, he considered that they must have strained the iron almost to bursting before any heat was applied. He (Mr. Farey) had discovered a crack in the metal between the 7th and 8th, and 8th and 9th plug, or screw, from the vertex to the right, which he attributed solely to the effect of screwing in the plugs.—In reply to a question by the coroner, as to the opinion of the witness, whether he considered the mode adopted, of plugging a proper one, he stated—most certainly not. He objected altogether to the use of cast-iron in the construction of any machine which was required to bear a temperature of 500° —at the same time, he wished to qualify his observations, as to cast-iron, by stating that, in his opinion, had the cylinder been properly cast of good metal, it would undoubtedly have been much stronger—as the case, however, under notice was, he could only express his decided opinion, that the metal used was of the worst description: while he was, moreover, strongly of opinion, that the cylinder, or oven, had not been properly cast.

In reply to Mr. E. James, on the part of the patentees, Mr. FAREY stated he was fully aware that, at the time of the explosion, the oven was embedded in damp brickwork; but which, in his opinion, had no sensible effect on the metal, although subjected to a column of water passing through the apertures, or orifices, in the cast-iron plates of which the cylinder was constructed of 500 to 600° . He admitted, that the cylinder might have stood a cold pressure of 3000 lbs. to the square inch, which test might alone have brought it so much nearer to explosion. He (the witness) was fully aware, that the safety-valve was placed so as to relieve the pressure at 2200 lbs., but did not consider such was safe. In all cases of cast-iron machinery, in his opinion, it ought to possess strength sufficient to resist ten times the pressure at which the safety-valve is loaded, all high-pressure engines being made on that principle.

Mr. A. H. RUSTON, who is foreman to Messrs. Robinson, concurred in the evidence given by Mr. Farey, except that he should have no hesitation in using cast-iron for high temperatures, assuming the castings to be perfect, and of sufficient strength to withstand the pressure.

The inquest stands adjourned until TUESDAY, as previously observed; and in the interim we may direct attention to an article on the subject of the patent in another column, which we had prepared without reference to the melancholy accident under notice.

The following diagrams will illustrate the nature of the accompanying remarks:—Fig. 1, gives a section of the flat plate, on which principle the cylinders are constructed; a, the surface of the plate; b, section of the internal construction of the cells or passages, as cast in the plate for the reception of the water; c, the pipes for communicating with the boiler; d, screw plugs.—Fig. 2, a vertical section of the cells, with plugs.—Fig. 3, represents the cylindrical boiler, from which the heated water is emitted; a, the cast-iron cellular cylindrical boiler; b, section of the cells through which the water passes; c, the plugs at end of the cells or passages; d, the fire which heats the cylinder; e, the flues heating the external surface of the boiler; f, the fire, or fuel, door; g, the pipes through which the water is forced by the amount of heat, which, after being circulated through the upper cylinder (at a height of 35 feet), returns again to the bottom part of the boiler through the pipes, h, which are connected, as in pipe g, with one man; i, the ash-pit.—Fig. 4, is a side view of the cellular cylinder, in which Mr. Dakin's patent roasting apparatus is inserted; a, the cast-iron cylinder; b, the brick-work on which it rests.—C, section of the piece torn off by the explosion, which extends over a space of 9 cells; d, the horizontal and vertical intersection of the several passages, or cells, at the exploded part; e, the honeycombed portion of the casting; g, the pipe through which the water is injected from the cylindrical boiler; f, the return-pipe, or passage of water, after having passed through the cylinder, as described by letter h, in fig. 3; a, the pipe leading to the safety-valve; i, Mr. Dakin's roasting cylinder, supported at the one end by a pedestal, k, and at the other by a suspension bar, marked l; m is the wheel turnedy a strap, being attached to the axle of the interior cylinder, to keep up the rotary motion.—Fig. 5, presents an end view of the cylinder; a, the thickness of the metal, with the plugged cells; b, the brick-work; c, the part torn away by the explosion; K, front view of Mr. Dakin's cylinder; l, the suspension-rods, as shown in fig. 4; f and g, the water-pipes, as described in fig. 4.—It will be seen by fig. 5, the point at which the cylinder was torn by the explosion; the effect of which is also shown in fig. 4.

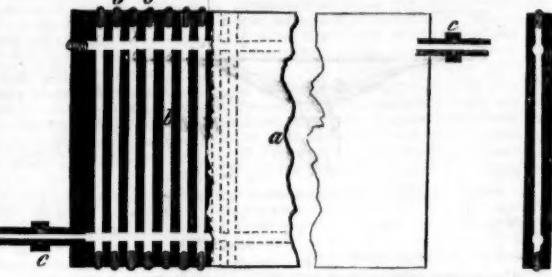


Fig. 1.
Fig. 2.

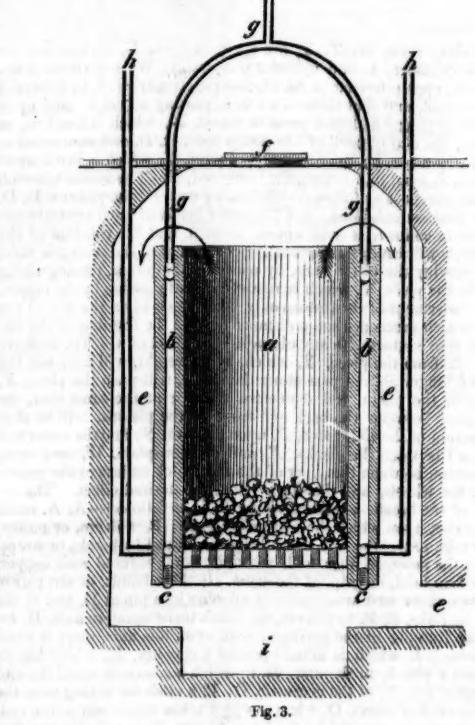


Fig. 3.

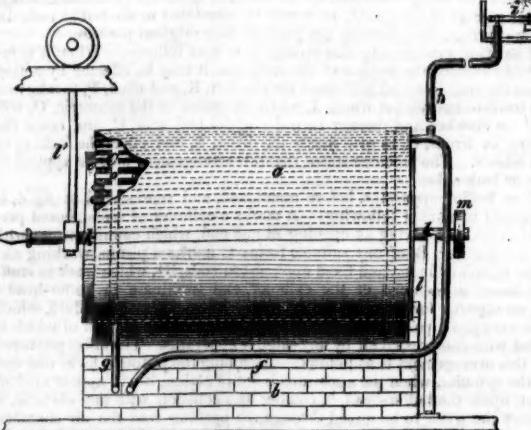


Fig. 4.

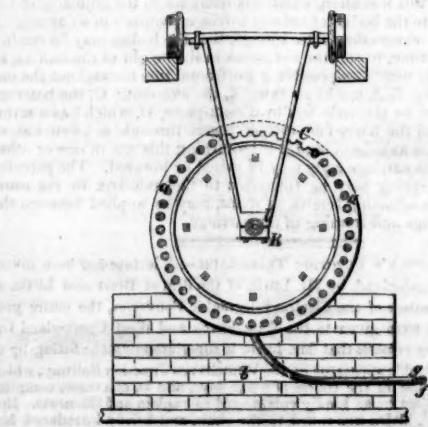


Fig. 5.

[Since the holding of the inquest, we have had an opportunity of examining the apparatus, and the scene of the accident, which we will endeavour to describe, perfectly irrespective of the evidence given, or the opinions which may be entertained by the patentees, or other parties interested. The apparatus consists of a cylindrical boiler, placed at the base of the building, being 12 in. in diameter, and 2 ft. in length, in which are 30 cells, communicating with each other, in a vertical position, through which the water passes, and is heated by a coke fire in the centre, as described in another column; from this a communication is made, by means of a pipe, to the cylinder, conveying the heat to the roasting-apparatus, or cylinder, which is applied therein—the height, or dis-

tance, which the water is carried being 35 ft. The latter cast-iron cylinder is 20 in. in diameter in the interior, with a thickness of metal of 2 in., and the length 32 in., which is placed in a horizontal position; the perforations, or cells, being 47 in. in number, of $\frac{1}{2}$ in., which are intersected, or connected, with each other by a transverse tube, or aperture, within 2 in. from either end of the cylinder, the ends of the lengthened cells being plugged with screw-plugs, while there are only two apertures from the connecting pipes to the cells of which the cylinder is composed, by which the means of ingress and egress of the heated water in forming its circuits through the cylinder is obtained. On referring to the accompanying diagrams, which are essentially necessary to give a clear description of the apparatus, its nature will be better understood; while it will be now our object to offer one or two unbiased observations on the accident, and its causes. It appears from the information we have gathered, that the outer cylinder, from which the heat is obtained, was fixed, and the interior cylinder, lined with silver (Dakin's patent), was introduced, rotating with a play of about $\frac{1}{2}$ in.—thus filling the space of the interior, or vacuum, of the outer cylinder; the coffee being introduced into the former, which, by a rotary motion, was subjected to the heat emitted. The apparatus being fixed, it was embedded in a mass of brickwork 14 in. thick, with a view of confining or retaining the heat, as with an oven, or furnace, and thus preventing the radiation coming in contact with the atmosphere, or the effects of the cold air on the iron surface. It appears that upon the completion of the brickwork, the patentees' agents, or workmen, left the premises, giving instructions as regards the safety-valve, and directions that the heat should not exceed 500° , so as to allow the brickwork to dry before the machine, or cylinder, was put to work. It appears, however, that, within two hours after the erection of the walls and the covering, or enclosure, of the cylinders, directions were given by Mr. Dakin, or some party in his employ, to increase the pressure or heat; the consequence of which was, that the water, passing through the cells, or perforations, in the cylinder, was raised to the temperature of 600° to 700° , as manifested by the blue heat to which the rivets, or screws, were heated. The result, unfortunately, was the explosion, or bursting, of the outer cylinder, as shown in the diagram—the fracture being about 16 in. on the curve, and 6 to 8 in. in length on the run, or length, of the cylinder. It being the subject of inquiry, as to the cause of the accident, two causes are assigned—to one or other of which, if not both, the accident is ascribed; the one the wetness, or damp, of the outer brickwork, whereby the expansion of the inner and outer surface of the cylinder were distinct, and a wide difference existing—the former having been proved at 500° , previous to the introduction of the interior cylinder, or the closing of the ends, by which the heat was naturally increased—while the temperature at the outer surface was depressed by the effect produced by the brick-work. On the other hand, it is maintained, that the accident is ascribable to the iron of which the cylinder is made not being of sufficient strength, and, more especially, the faultiness of the casting where the fracture took place—which we have examined, and can only express our opinion that such was alone calculated to have caused the accident without any other defect. As the adjournment of the inquest is to be held on Tuesday next, we reserve any further remarks, but shall return to the subject in our next; when we shall give a report of the evidence which may be adduced, and the opinions advanced by the scientific gentlemen, who, we understand, will be examined on the occasion.]

ON THE EFFECT PRODUCED BY HOT WATER, OR STEAM, IN CONTACT WITH IRON.

The following note, or anecdote, of past days, connected with science, will doubtless be read with interest at the present moment, and for which we are indebted to Mr. Andrew Smith, C.E.:—"The late Marquis of Worcester, being much interested in scientific pursuits, tried many experiments connected with the application and formation of steam, in the course of which, having visited Paris, he was shown through the lunatic asylum, where he came in contact with a patient of the name of Decaux, who was much excited on that particular subject, which naturally elicited the marquis' attention, and who at once questioned him as to his knowledge of its powers and application. In reply to which, the maniac stated, that he had invented a power which would, he was satisfied, be the regenerator of the world, and referred him to his pamphlet, dedicated to Queen Elizabeth, the reigning sovereign of France—it being observed, *en passant*, that the cause of his confinement was the publication and expression of his opinions on the subject of steam, which were ascribed to the emanations of a disordered mind. He died in the asylum, after having been confined a considerable time. The Marquis of Worcester, on his return to England, continued his researches, and the application of his mental energies, to the subject, being much strengthened in the opinions he had formed and the conclusions he entertained, by the communications made, as above referred to. He accordingly commenced a series of experiments, with the view of testing and ascertaining the correctness of the data afforded by M. Decaux. In the course of these experiments, he charged, or filled, a piece of ordnance, of strong calibre, with water, hermetically closing the muzzle with a screw-plug, in proportion to the thickness or strength of the piece operated upon, and the touch-hole in like manner. The piece of ordnance thus being secured at the several apertures, and being filled with water, was subjected to the heat of a fire, or furnace; while it should be observed, that the plugs were screwed home, so as to come in contact with the water, and thus to exclude any air, so far as the contact of matter in that state could exist. At this period it may be remarked, that the effect of heat, or calorific, was comparatively unknown—and its effects upon matter, infinitely less—neither Dr. Black, Watt, or Lardner, being then in existence, and, consequently, not in a position to enter into, to discuss, or advance even a theory; while treatises on so important a subject may be said to have been then unknown. Upon the cannon, or piece of ordnance, being thus subjected to an extreme heat, the expansion of the metal naturally took place; whereby a space was left, which was filled, or occupied by the steam arising from the water, occupying the space so created. The metal, from the high temperature to which it was subjected, naturally became weakened, in consequence of the expansion of the power of the metal—that is to say, the force or effect. There is no existing law that we know of, in mechanics or chemistry, from which we can arrive at correct data. Wedgwood, and other eminent philosophers, or writers on heat, have done much for the benefit of society; but we are still in a state of chaos, or confusion of ideas, in that particular. It is useless to say, or even to contemplate the cause, while the result is well known—that of the bursting of the cannon, from the pressure within, and the deterioration of the metal, arising from its expansion, and the forces being opened, as already referred to. It becomes an important question as to the effect produced by heat. It will, we think, be admitted that heat is the parent of chemical power, and that gravitation is the parent of mechanical power; and what may be the effect produced on cast or wrought-iron, by air or water, at a high temperature, is yet unknown."

THE CONWAY TUBULAR BRIDGE—DINNER TO ROBERT STEPHENSON, M.P., THE ENGINEER.—At Conway, on Wednesday, this long-announced dinner took place. It was intended as a demonstration of public esteem, and ultimately erecting, that masterpiece of engineering skill—the tubular bridge over the River Conway. The Hon. E. M. Lloyd Mostyn, M.P., presided on the occasion. When returning thanks, after his health had been drank, Mr. Stephenson said, six or seven years ago, he conceived the idea of a tubular iron bridge; but, when he first broached the plan, he was met on all sides by glances and expressions of distrust. He was not, however, daunted; but, conscious that the plan of a tube, made of cast-iron plates, was perfectly practicable, he proceeded to a series of experiments to test and develop the scheme, and the result was seen under the walls of their ancient and venerable castle.

THE HYDRAULIC ENGINE AT THE NEWCASTLE POLYTECHNIC EXHIBITION.—The question is constantly asked, how does the engine go by water? And, as much misapprehension appears to prevail on the subject, we shall endeavour to answer the inquiry. It will be observed, that the engine has two cylinders, lying at an angle with each other; each of these contain a piston, upon the alternate sides of which the moving power is exerted in the same manner as in the steam-engine. But where, it is asked, does the water come from, and where does it go to? The answer to this is as follows:—The water company have two main pipes in the adjacent street, one of which communicates with a reservoir at Carr's-hill, situated at an elevation of 420 ft. above the Tyne, and the other with a reservoir at the head of Gallowgate, the height of which is 230 ft., above the same point, so that there is a difference of elevation between the two reservoirs of 190 ft., and a corresponding difference of pressure in the water supplied from each, which difference is equal to about 82 lbs. on the square inch. Now, the engine being connected by branch pipes with both of the street mains, the pistons are acted upon by the pressure of the Carr's-hill water on the one side, and by the opposing pressure of the Gallowgate water on the other, and the engine is consequently put in motion by a force equal to the difference between the two pressures. By this means the water, instead of being run to waste, merely passes from one set of pipes to the other, and remains available for the use of the town. The engine is worked by slide valves, which, we are informed, are so constructed as to afford very wide passages for the water, without occasioning an undue pressure on the face of the slides. There is also, we are told, an arrangement for liberating the water in the cylinders at the time when the valve ports are closed, which enables the engine to turn each stroke with the same freedom as a steam-engine. At any rate, certain it is that all impediments to the attainment of high speed and easy motion are removed in this engine, and there appears to be every probability of its coming into extensive use, not only in cases where steam-engines are considered objectionable, but also for many purposes where it will be found more economical than steam, and in others where it will be applied in substitution of manual labour. We congratulate Messrs. W. G. Armstrong and Co. on the production of this engine, which is novel and ingenious in design, and beautiful in workmanship.—*Newcastle Journal*.

ELECTRIC LAMP LIGHTING.—We understand that a young man of this town, named J. Southwood, has proposed to the town council the adoption of a plan which he has devised, and by which he confidently asserts that all the public lamps of the town may be simultaneously lighted and extinguished, without the intervention of lamp-lighters traversing the streets with their ladders. The agent by which it is proposed to do this is electricity conveyed by a single continuous wire to every lamp; and, moreover, by the same agent and by means of the same wire the lamps are to be cleaned. Thus, the work that now fully employs a number of men may be performed by one person, occupying him only a few minutes daily. We do not see any impossibility in all this: on the contrary, we believe it may be done: and, as the inventor says, that any number of towns, or all the towns of the kingdom, might be embraced and illuminated simultaneously by the same galvanic battery; but, we are not prepared to offer any opinion as to the practical value of the scheme on economical and useful considerations, which must depend upon the expense of the apparatus, the cost of keeping it in repair, and of guarding it against wilful damage and accidental injuries; taking into account also the extent of inconvenience if anything goes wrong.—*Leeds Intelligencer*.

NEW PATENT.

W. Taylor, Birmingham, mechanist, for an improved mode of turning up or bending flat plates of malleable metals, or mixture of metals, by aid of machinery, into the form of tubes.—*Mechanics' Magazine*.

Mining Correspondence.

ENGLISH MINES.

ANTIMONY AND SILVER-LEAD.—Captain Charles Williams (May 16) reports.—We have commenced our deep adit, to cut the whole of the antimony lodes on the west side of the sett; we have finished our lobby, and driven about 6 fms. through standing ground. We have about 10 fms. further to drive to cut our first lode, being No. 1 on the map. On the east side of the sett, we have cleared out the adit driven by the old men for upwards of 25 fms.; the ground stands well without timber; we found, in the lower part of the adit, a lode 1 ft. wide, composed of gossan, jack, a little antimony, and good stones of lead ore—saving work. We have opened on this lode further to the hill, and found it the same as before. We intend to drive, on the course of this lode, about 18 fms. to the hill, where it will form a junction with the east and west lode (we have discovered in the higher end of our adit) at a depth of about 12 fms. Capt. Vivian, of Truro, was here last week to inspect the mine for some gentlemen in the country; he was much pleased with our operations, and likes the lodes much. I am glad to hear you have succeeded in reducing the dues from 1-12th to 1-15th, as this will make a material difference to the shareholders. We have, for the present, suspended sinking the shaft on our antimony lode to the hill, as there is a large quantity of water in the shaft, which the hot weather, I hope, will dry up.

BARRISTOWN.—Capt. T. Angove (May 12) reports.—The stope at Nangle's, in the bottom of the adit level, are not looking altogether so well as last reported—producing at present rather over $\frac{1}{2}$ ton per fm.; the pitches in the back of this level are producing about $\frac{1}{2}$ ton per fm. We have commenced driving south from the bottom of eastern flat-rod shaft. In the cross-cut, south from Slob shaft, we have good ground. The pitches in the old mine are producing but a small quantity of lead.

BEDFORD UNITED.—Capt. Thos. Ellery (May 17) reports.—At Wheal Marquis, in the engine-shaft, the sumpion have been engaged, during the past week, casing and dividing the whin-shaft under the 80 fm. level, and driving the cross-cut south in the 90; I hope to get the whin to draw from this level by the latter part of this week. The lode in the 90 fm. level, east of the sump-winze, is 3 ft. wide, 18 in. of which producing good work; the 90 fm. level west is without alteration since my last report, and progressing favourably; the stope, in the back of the 90 fm. level, is worth 45l. per fm.; in Hodges's rise, in the back of the 90 fm. level, the lode is 3 ft. wide, producing saving work. The lode in the 80 fm. level, east of sump, is 18 in. wide, producing good stones of ore. The 70 fm. level east is without alteration. The lode in the 47 fm. level east is 18 in. wide, with spots of ore throughout. The lode in the winze, sinking under the 70 fm. level, east of sump, is 2 ft. wide, producing good work. At Wheal Tavistock lode, in the 47 fm. level, west of Phillips's shaft, little has been done during the past week, the men being employed erecting the whin and clearing the stuff. In the south lode, in the 25 fm. level, east of the engine-shaft, the men have been driving by the side of the lode; the lode in the adit level, on the south lode, is 18 in. wide, unproductive at present.

COATLITHE HILLS.—Capt. J. M. Paull (May 13) reports.—The men have been employed in opening a little eastward on the course of the vein, and find it varies from 3 to 4 ft. in width; it is producing some very good stones of lead ore, and has every appearance of answering well, if explored further into the hill.

COMBLAWN.—Capt. J. Hosking (May 16) reports.—Capt. Tabb has this day inspected Comblawn Mine, and I have no doubt but you will have his report to-morrow. We have put a solar in the shaft 5 fms. below the 10 fm. level, and have taken out some of the lode; it is about 1 ft. wide, and orey throughout; you will bear in mind, that this is the middle lode; we have sunk about 4 ft. on the lode in the adit level east; it is about 2 ft. wide, composed of gossan, prian, flookan, and friable spar—a promising lode, underlaying about 1 ft. 6 in. in a fm.; this being only 10 ft. below the surface, we have suspended the sinking of it for the present. In sinking north of the engine-shaft, on the main lode, we have intersected several branches, varying in size from 3 in. to $\frac{1}{2}$ in.—rich in quality; in fact, we are saving out some excellent work; from these favourable indications, we expect that when the footwall of the lode is met with, a decided improvement will take place; and that in sinking a few fathoms on the lode, we shall be able to ascertain its exact angle of depression. Capt. Tabb will, no doubt, in his report, explain to you the nature of the lodes, both at the north and south mines, and make some remarks relative to their underlays and bearings; then the directors will, in all probability, be able to form some opinion why the lode has not yet been intersected in the cross-cut in the 20 fm. level. I hope to be able to see more of the lode in the whin-shaft (before alluded to), in driving east from the engine-shaft, on the middle lode, in a day or two, when I will forward you all particulars.—*May 18.*—We have this day met with the footwall of the lode in the new whin-shaft; there is a beautiful flookan on it, making the ledge 15 in. wide, good saving work. Since yesterday morning the men have broken from the lode and branches 14 whin kibbles. I have set the shaft to sink at 55s. per fm., and ls. 6d. in 17 tribute; the underlay of the lode in the shaft is about 9 in. in a fathom.

Capt. John Tabb (May 18) reports—I visited Comblawn Mine on Tuesday; the water being in, kept me from going below. Capt. Hosking says, they have driven a cross-cut north 5 fms., to cut the main south underlayer, which you will see marked on the sketch; the lode at surface underlies about 2 ft. in a fathom; should it continue so, it will take a cross-cut 5 fms. 4 ft. to intersect it in the 20 fm. level. From what Capt. Hosking stated, I should say they will have about 4 ft. of ground to lay open in the 20 cross-cut; had the water been out, I should be able to speak more explicitly.

CWM ERFIN.—Captain S. Nicholls (May 13) reports.—The shaft is down 4 fms. 8 ft. The lode is looking promising at present, with some stones of ore in it; the men have only sunk 3 ft. this week, on account of an accident to the rods. The east end is poor at present; the men have driven 3 fms. 5 ft. this month, and hope, by the end of another month, to get into ore ground, as the old men sunk and stopped in the level above as far as they could for water. The stope, west of whin-shaft, is looking much better than last reported, worth 10 cwt. of lead to the fm.; the stope, east of whin-shaft, are looking very well, worth 1 ton of lead to the fm. The stope, west of the eastern shaft, is worth 7 cwt. of lead to the fm.

DEAN PRIOR AND BUCKFASTLEIGH.—Capt. H. Choake (May 17) reports.—We are getting on with the sinking of the engine-shaft with all possible speed; and, in the course of three or four days, we shall be in a position for fixing the cistern and the pitwork in the 80 fm. level; the stamps will be completed by the latter end of the next week; having had to make the necessary preparations for sinking, has somewhat impeded the progress. In the 30 fm. level, east of the cross-cut, the north part of the lode still maintains its very promising character—being large, and producing saving work; in the end, driving west, the north part of the lode is improving, and producing good stones of ore; the improvement that has taken place in the two levels is very encouraging, and holds out the most favourable expectations in the level below—that is, in the 40 fm. level; therefore, we shall lose no time in sinking the engine-shaft 10 fms. below the present bottom level, in order to cross-cut to the lode, being so desirable an object.

EAST CROWNDALE.—Capt. S. Paul (May 13) reports.—That the ground in the 58 fm. level, driving north, still continues hard and spare to drive, the killas being much mixed up with branches of spar; the ground in this level south is tolerably favourable for driving, and is in a good killas country. The 47 fm. level west is still poor—lode about 14 in. wide, composed of capel, killas, spar, and spots of ore; the rise and stope in the back of this level still produce some ore of a good quality, although the quantity has fallen off of late, owing to the ore ground coming shorter; the lode in the whinze sinking below this level looks very well, is about 2 ft. wide, composed of peach, spar, mundic, and copper ore. I hope in my next report, to state the quantity raised in the past week. The men have been obliged to take down a piece of the side of the level. The lode in Diamond's engine-shaft, at Rix Hill, continues to hold in size and appearance, and produces some good tinstuff, is 4 ft. wide, composed of peach, capel, elvan, and tin. The engineers are busily engaged in fixing the engine at this shaft.

EXMOOR WHEAL ELIZA.—Capt. Whitford (May 16) reports.—On my visit to the above mine this morning, I found the lode in the whinze full 9 ft. wide; its underlie south is 1 ft. 9 in. per fm.—the component parts of which are gossan, prian, and a considerable portion of mundic. This singular and extraordinary lode demands more than ordinary attention, as its size and indications are so extremely inviting; but, in consequence of the great influx of water, it is absolutely impossible to continue the whinze; therefore, it was thought proper to drive a cross-cut north in the 12 fm. level, to intersect the lode in the whinze, which is being set at 7s. per fm., and I hope will be accomplished in six weeks from the present date, when you may reasonably anticipate something good.

GREAT MICHELL CONSOLS.—Capt. T. Richards (May 17) reports.—We have commenced driving in the 45 fm. level, both east and west of the sump-winze—the lode presents much the same appearance in each of the ends, as in the last few feet sunk in the whinze, containing mundic, flint, and spar, with ore intermixed throughout—very promising. In the 35 fm. level, west of the sump-winze, the lode consists of mundic, capel, spar, and ore. We sampled at Wadebridge, on Monday last, a parcel of ore computed at 60 tons.

HERODSFoot.—Capt. John Maden (May 16) reports.—Since my last report of the 28th of February last, the engine-shaft has been sunk below the 94 fm. level 7 fms.; the 94 fm. level is driven north 8 fms. 2 ft.; the lode in this end is 3 ft. wide, producing three-quarters of a ton per fathom; it is much richer than when first cut into; this level is driven south 8 fms., where we have had branches of the lode, from 6 in. to 1 ft. wide; we are now driving west to cut the lode we have in the north end. The 82 fm. level is driven south 12 fms. 2 ft.; the lode is $\frac{1}{2}$ ft. wide, producing three-quarters of a ton

per fm.; this level is driven south 12 fms., where the lode is 2 ft. wide, producing a ton per fm.; in a whinze, sinking below this level, 15 fms. south of the engine-shaft, the lode is 2 ft. wide, producing 14 ton per fm. The 72 fm. level is driven north 6 fms. 3 ft.; the lode in this end is 1 ft. wide, producing 14 ton per fm.—this end is extended the farthest north of our levels; the 72 fm. level south is driven 5 fms. on the western part of the lode, where the eastern part has been cut into and found to be 2 ft. wide, producing three-quarters of a ton per fathom; the horse, between the two parts of the lode, in the present end, is 2 ft. wide; at 5 fms. further north it was 6 ft. wide. The 62 fm. level is driven north 6 fms.; the lode in this end is 1 ft. wide, producing three-quarters of a ton per fathom; a rise has been put up, in the back of this level, 5 fms., where we have had good bunches of ore; but at present is poor. The rise in the back of the 52 fm. level, against Winsor's shaft, is up 8 fms.; Winsor's shaft has been sunk 8 fms., which makes it about 40 fms. from the surface; we expect to hole this shaft to the rise in about three weeks. We have 11 tribute pitches, working at an average tribute of 32 lbs. per ton, from which we are raising about 70 tons per month, which will meet the present cost, and which is greatly increased by raising stone for the new engine-house, making new dressing floors, sinking Winsor's shaft, rising against the same, horse labour for drawing stone, working Winsor's whin, &c., &c.; the new engine-house is nearly completed; if we can have the engine at the time appointed, we shall get it to work in about five or six weeks; soon after which, we hope to raise 120 tons of ore per month.

HOLMBUSH.—Capt. W. Lean (May 16) reports.—We have commenced driving the 132 fm. level, west of the diagonal shaft; the lode is split into several small branches, composed of mundic, spar, and spots of copper ore. The lode in the 120 fm. level south is 6 ft. wide, composed of spar, white iron, and stones of lead, all of which is saved. The lode in the 110 fm. level south is 4 ft. wide, composed of quartz, and stones of lead, worth 4d. per fm. The lode in the 100 fm. level south is 3 ft. wide, composed of soft spar, spotted with lead (saving work for the stamps); the lode in the rise, above this level, is 2 ft. wide, producing stones of lead; the lode in the whinze, sinking below this level, is 20 in. wide, composed of spar and lead, saving work. The flap-jack lode, in the 100 fm. level east, is 3 ft. wide, composed of a great quantity of mundic, blonde, and stones of copper ore, with favourable ground for exploring. The lode in the 90 fm. level south is 20 in. wide, composed of spar, flookan, and a small quantity of lead. The tribute pitches, on the whole, are yielding a fair quantity of lead, and the men earning fair wages.

KIRKCUDBRIGHTSHIRE.—The agent (May 18) reports.—In the 50 fm. level, west of Stewart's shaft, rising against the whinze on the north lode; we have not taken down the bearing part of the lode for the week—we expect to hole in a few days—neither have we taken down the lode in the whinze. The lode in the 40 fm. level, west of Stewart's, is still large and kindly, producing 1 ton of lead per fm.; same level, west of Keith's shaft, lode 3 ft. wide, yielding half a ton per fm.; in the 40, east on the caunter, lode 3 ft. wide, with a good branch of lead on the north wall. In the 30 fm. level, west of Keith's, lode above 4 ft. wide, making half a ton per fm.; in the 30, east of Stewart's, lode 3 ft. wide, producing fine stones of lead. We consider that this level is fairly through the dead ground.

MENDIP HILLS.—Capt. F. C. Harpur (May 15) reports.—The lode in the 88 fm. level south of shaft is become much smaller than when I last wrote, being at present not more than 1 ft. wide, composed of iron, spar, and a little flookan, near the foot wall side—ground hard for driving. In the slag department, I am glad to inform you, we have a decided improvement in the quality of the work at present removing to the dressing-floors. The beds of stuff through which we are extending the open cutting, towards the eastern part of the valley, continue about 12 ft. thick in the centre of the valley, and gradually diminish in thickness on either side. The entire breadth of the slag-stuff, at the point we are now working, is about 34 yards. Since the 1st inst. we have extracted 5 tons 4 cwt. 2 qrs. 26 lbs. of metal, and hope, by Wednesday, to have sufficient slag prepared to keep us smelting the remainder of the week. I have arranged to forward the two parcels of lead to Bristol this day and tomorrow, and, on the following day, I hope to see it shipped for London.

SOUTH DOLCOATH.—The mine agent (May 17) reports.—I have inspected South Dolcoath Mine, and beg to hand you my report. The engine-shaft is sunk to the 50 fm. level on the course of the lode; the lode is 3 ft. wide, composed of spar, peach, and flookan, with some spots of ore; I would recommend sinking the shaft 2 or 3 fms. more, as there is a branch now dropping into the same from the south. The 40 fm. level is driven west of the shaft about 12 fms.; the lode in the end is about 2 ft. wide, and looking kindly; I would recommend driving this level. Also, the 50 fm. level west, thereby insuring good ventilation; about 100 fms. west this level will intersect the great cross-course, where all the lodes in the vicinity have proved productive; the ground, at present, may be driven for 3d. per fm. By sinking occasional winzes from the 40 to the 50, these levels may easily be driven, and the workmen have good air.

SOUTH WHEAL TRELAWSY.—Capt. W. Jenkins (May 16) reports.—We are driving the cross-cut, west of Snell's engine-shaft, and cutting ground for platt, with 9 men, in the 30 fm. level. Also, in the latter part of last week, we have been engaged in casing and dividing down the whin-shaft from the engine-shaft.

TRELEIGH CONSOLS.—Capt. William Symons (May 18) reports.—In the 120 fm. level, at Christoe's, we have cut the lode, which is 3 ft. wide, with a north underlay; it is spar and caples—poor. In the rise, above the 100 east, the lode is 14 in. wide, but little ore. Garden's shaft, below the 100, is sinking in the country; in the 100, east of ditto, the lode is 1 ft. wide, no mineral; in the 100, west of ditto, the lode is 2 ft. wide, producing good stones of ore; in the 90, west of ditto, the lode is 15 in. wide, with occasional stones of ore, not to value. In the rise, above the 80, the lode is 18 in. wide, with stones of ore, but not to save for dressing. In the 70, west of ditto, the lode is 2 ft. wide, worth 8d. per fm., and has a very promising appearance; in the whinze, below the 70, the lode is 20 in. wide, with stones of ore only. In the 60, west of ditto, the lode is 20 in. wide, worth 6d. per fm. In the 50, west of ditto, the lode is 1 ft. wide, worth 8d. per fm.; in the adit east, on Wheal Parent lode, the lode is 2 ft. wide, worth 5d. per fm.; in the adit, north of engine-shaft, we have not yet cut the lode, but did expect it before this.

WEST WHEAL JEWEL.—Capt. Thomas Bray (May 15) reports.—In the 57 fm. level, west of Williams's cross-course, on Wheal Jewel lode, the lode is 2 ft. wide, worth 16d. per fm.; in the 57 fm. level, east of Williams's cross-course, on the same lode, the lode was not taken down in the past week. In the 70 fm. level, west of Williams's cross-course, on the same lode, the lode not taken down in the past week; in the deep adit, west of Hodges's cross-course, on the same lode, the lode is looking more promising for ore than when last reported. The stope, in the back of the 12 fm. level, west of Pryor's whinze, are looking well, worth 35d. per fm.; the men that have taken the 12 fm. level are stopping these stope, until we can clear the tin-work for them to drive the 12 fm. level west. No lode has been taken down in any other part of the mine in the past week.

WHEAL BENNY.—Capt. J. Tabb (May 15) reports.—You are already in possession of full information as to the nature of the lodes discovered, and I beg to hand you the following report thereon:—Ford shaft is sunk from 6 to 7 fms. below the 20 fm. level, and shall have to go down 3 to 4 fms. deeper, where we intend to drive a cross-cut, to intersect the lode, which held such an encouraging appearance in the 20 fm. level. The general appearance of the Benny lode is also of a promising character, and we may expect it to prove productive in depth; the situation of the shaft is well adapted for the development of these lodes; a cross-cut, taken south about 14 fms., would intersect the Benny lode in the 30 fm. level, calculating the lode's underlay to be 3 ft. in the fm. In the meantime, we shall be in a position to cut through the Ford lode in the 20 fm. level cross-cut south. We shall have to drive about 18 fms. to intersect the Champion lode south, supposing its depth to be the same as the Benny lode.

WHEAL MARY ANN.—Capt. Peter Clymo, jun. (May 15), reports.—The lode in the 40 fm. level, south of the boundary, is 3 ft. wide, worth 8d. per fm. Barratt's shaft is sunk 8 fms. under the 30 fm. level, where the lode is 4 ft. wide, worth 10d. per fm.; the lode in the 30 fm. level, south of Barratt's shaft, is 4 ft. wide, and worth 10d. per fm.; Pollard's shaft is sunk 3 fms. under the 30 fm. level; the lode in the 30 fm. level, north and south of Pollard's shaft, is 1 ft. wide, composed of can and some lead. The lode in the 15 fm. level, south of Pollard's shaft, is $\frac{1}{2}$ ft. wide, but at present not producing much lead. The stope generally are looking well.

WHEAL TRELAWNY.—Captain J. Bryant (May 16), reports.—We have sunk 6 ft., under the 62 fm. level, in Phillips's shaft, and have nearly completed cutting the tip-plat—when finished (which will be in a day or two) we shall immediately proceed with sinking under: the lode in the 62 south is still large, and improved since my last report, worth at present 12d. per fm. The lode in the 52 north is worth 9d. per fm. The lode in the 52 south, the lode is still large, and a little improved, opening ground that will pay well for stope; the lode in the whinze, under this level, is large, and worth 24d. per fm.; the stope in the back of this level is good, and the ground is rather hard. The lode in the 42 north is 3 ft. wide, composed of can, spar, and lead, with soft blue elvans intermixed, worth 7d. per fm.; the stones in the back of this level are similar to my last report. The lode, in stopping the back of the 32 fm. level, is not yielding so much ore as when last reported on. I cannot speak of any change in sinking Trellawny's engine-shaft, or in the 22 cross-cut east. At the north mine, we find the lode to be nearly perpendicular in rising against Smith's shaft, where it will yield about 5 cwt. of ore per fm. We have about 20 ft. more to sink and rise, to hole the shaft to the 30 fm. level, which, if the air do not prevent the men from working, will be completed by the latter part of this week.

SILVER-LEAD MINES IN SWITZERLAND.

Sir.—I deem it my duty to notice a letter on these mines, signed by "Molyneux and Co., 140, Strand—not for the purpose of contradicting the statements there made, but to correct an error in dates, which, though material, I believe to have been unintentional. Mr. Boyet arrived from Switzerland on the 15th of April, but the gentleman who had visited the mine did not arrive until the 17th or 18th; and a meeting was held on the 19th, at which, and subsequently, Mr. Boyet expressed his annoyance and disappointment that a sum of money, which had been fixed upon, and which he was led to believe was ready for him on his arrival in London, was not forthcoming. Mr. Boyet conceded a delay until the 26th ult., when the parties not being prepared with the required amount, he repudiated all further treaty; that gentleman then proposed terms with certain of the parties who had been engaged in the former negotiation, and who were ready to have executed their part thereof, which I have had the satisfaction of carrying out. The original documents, in English and French, are in my possession, signed by all the parties—the terms of which are known to Molyneux and Co.; and I have also in my possession the following letter from Mr. Boyet.

4, Queen-street, Cheapside, May 18.

London, May 10, 1848.
Dear Sir,—I hereby authorise you to contradict any statements which may appear in the public journals, or otherwise, aluding to the sale of the property of myself and partners in any mines in Switzerland, except to your

RAILWAY AND COMMERCIAL GAZETTE.

PRICES OF MINING SHARES.

BRITISH MINES.			BRITISH MINES—continued.		
Shares.	Company.	Paid.	Shares.	Company.	Paid.
1000 Abergwessin	7	—	200 South Harvannah	10	25
512 Albert Consols	1	9½	256 South Molton	5	8
1024 Alfred Consols	4½	14	256 South Tolgrus	7½	35
235 Andrew and Naugles	28½	8	256 South Treawney	20	10
1000 Antimony and Silver	5	5	126 South Ycoland	16½	20
Lead Mining & Smelting	5	5	128 South Wheal Bassett	110	70
1624 Balleswidden	9	18	256 South Wh. Betsy	2½	12½
128 Bainouc Consols	25	25	124 South Wh. Francis	160	230
1000 Bauwen Iron Co.	2	—	256 South Wh. Hope	—	5
1600 Barristown	4½	3	1000 South Wh. Maria	2½	2
4000 Bedford	2½	3	256 South Wh. Sophia	4	4
1244 Birch Tor Tin Mine	9½	2	1000 Southern & Western Irish	3	4
5000 Blaenavon	50	23	280 Speare Moor	30	40
1000 Botallock	175	80	256 St. Austell Consols	9	6
130 Brewer	5	7	94 St. Ives Consols	—	320
10000 British Iron, New regis.	10	13	126 St. Michael Penkivel	5	104
Ditto ditto, script	10	—	999 St. Minver Consols	1	6
128 Budnick Consols	52½	30	1000 Stray Park	45	16
128 Bury	20	21	9500 Tamar Consols	3	44
128 Callestock	17	30	1024 Tavy Consols	4	9
1000 Callington	19	27	6000 Trecroft	7	45
20000 Cameron's Steam Coal	6	5½-6	1000 Tin Vale	2½	44
256 Cadron Copper Mine	9½	2	126 Tokenbury	152½	10
256 Cadron Mines	22½	17	256 Treagine	2½	23
256 Cadron United	24	5	5000 Tredegar Consols	6	3
256 Canadian Wh. Hooper	21	14	2000 Tremaine	2	50
1000 Carr Brea	15	6	120 Trethellan	5	16
3000 Garthow Consols	14	6	130 Treviskay and Barrier	30	110
2048 Cascade	1	2	288 Trevena	1	25
112 Charleston	230	30	126 Trewhella	12	2
156 Cleveland	9	5	512 West Fowey Consols	40	15
512 Coalville Hill	5	1	256 West Providence	9	25
1900 Comblain	7½	3	200 West Seton	40	175
256 Craggaunowen	16½	15	120 West Trethellan	5	30
128 Crees Braws	120	100	256 West United Hills	—	5-6
500 Cumbrian	12½	10	512 West Wheal Francis	15	5
1000 Cwn Erfin	8½	5	256 West Wh. Friendship	9	8
300 D.Pri'r & Buckfastleigh	14	2	372 West Wheal Jewell	11	14
1000 Coombe Valley Quarry	2½	3	256 West Wh. Maria	3	1
6500 Cornish Mining Co.	2	2½-3	256 West Wheal Shepherd	5	24
1000 Copper Bottom	1½	6½	256 West Wheal Tolquin	21½	5
1024 Cosseine	48	20	256 West Wheal Treasury	19	12-14
256 Cradock Moor	16½	15	5000 Wicklow Copper	5	10-12
128 Crees Braws	120	100	184 Wheal Adams	51	10
500 Cumbrian	12½	10	1000 Wheal Agar	—	10
1000 Durban County Coal	45	9	256 Wheal Albert	10	8
3000 Dyngwyn	10	12½	128 Wheal Acland	13	2
256 East Alveney	10	25	256 Wheal Allen	2	5
112 East Caradon	47	47	240 Wheal Anderton	21	20
2048 East Crowndale	5½	4½	128 Wheal Ann	—	50½
512 East Coombe Silver-Lead	6½	6½	512 Wheal Anna Maria	1	2
128 East Pool	5	10	1024 Wheal Ash	42	8
100 East Reillstall	22	40	2560 Wheal Barbara	14	4-5
9000 East Tamar Consols	4½	1	256 Wheal Benny	10½	6
— East Wheat Alber	1	3	256 Wheal Blencowen	21	5
94 East Wheat Crofty	125	280	256 Wheal Buckets	20	5
1024 East Wheat Fortune	2	3	256 Wheal Calstock	5	10½-11
1024 East Wheat Friendship	3	3½	1024 Wheal Clifford	150	150
128 East Wheat Rose	60	900	128 Wheal Cobod	—	5
2048 East Wh. Rough Tor	4	2	128 Wheal Courtney	—	20
— East of Scotland Iron Co.	2½	1	6000 Wheal Curtis	3	3½
123 East Seaton	14	10	256 Wheal Dyke	12	13
256 Elborugh	12	2	256 Wheal Fortescue	6½	5
256 Exmoor Wh. Eliza	4	6	1000 Wheal Franco	27	30
512 Fowey Consols	40	45	128 Wheal Harriet	45	50
6400 Gadrail	2	2	256 Wheal Jane	21	15
20000 Galvanised Iron Co.	10	9½	256 Wheal Lawrence	—	34
4000 Gen.Mining Co. for Irel.	1½	1½	256 Wheal Louisa	8½	8
2048 Georgia Tin Mines	12½	18	112 Wheal Margaret	79	350
256 Gonanorema	34	30	512 Wheal Mary Ann	5	12
128 Goonveera	4	1½	237 Wheal Mary Consols	42½	26
2444 Grumbler & St. Aubyn	10	—	210 Wheal Prospect	4	7
100 Great Consols	1000	100	120 Wheal Reeth	41	150
256 Great Caledick Moors	22	25	128 Wheal Rose	60	15
256 Great Michell Consols	14	3½	256 Wheat Tremayne	35	15
256 Great Michell Consols	11	4	128 Wheat Trew	20	21
512 Gt.Wh.Bough Tor Con.	15½	12	256 Wheat Trevyrena	3	4
100 Grogwinion	5	—	256 Wheat Trevyrena	3	4
256 Gwinear Consols	7	6	256 Wheat Trevena	140	265
6000 Heighton Down, Con.	1	2½	242 Wheal Venland	29½	30
256 Herdsofot	18	24	256 Wheal Vlew (Ferrinz)	—	2
10000 Hibernal	12½	12	184 Wheat Vyvyan	—	60
239 Hobbs Hill	6	3	256 Wheal Williams	6	14
1000 Holm bush	19	6	—	—	—
827 Kirkcudbrightshire	5½	5	—	—	—
1000 Lamherroo Wh. Maria	11	4	—	—	—
128 Lelant Consols	90	60	—	—	—
160 Levant	—	90	—	—	—
1000 Lewis	15	6½	—	—	—
1000 Llwyn Males	5	—	—	—	—
3600 Llynni Iron	50	50	—	—	—
256 Lostwithiel Consols	15	15	—	—	—
6000 Marc Valley	10	24	—	—	—
5000 Mendip Hills	24	1	—	—	—
3000 Merionethshire State	13½	2	—	—	—

FOREIGN MINES.

FOREIGN MINES.		
5600 Alten Mining Company	14½	2½
15000 Asturian Mining Co.	12	3
20000 Australian	24	3
10000 Anglo-Mexican Co.	100	2
12374 Ditto Subscription	25	2½
6000 Barossa Range	2	2
3000 Bolanos	150	2½
20000 Brazilian Imperial	15	2½
12000 Cobre Cooper Co.	40	16-17
10000 Corralito Mining Co.	14	2½
10000 German Mining Ass'n	20	14-16
5000 Kinzithal Mining Ass'n	2	4
20051 Mexican Company	39	—
20000 Mexican & South Amer.	8	1½
5000 Mocoban & Cocos	30	6
29320 R.R. del Monte, regis.	28½	1½
Ditto Red Detourants	—	10
Ditto Jack Ditties	—	5½
Ditto Loan Notes	—	60
7000 Royal Santiago	10	6
2000 Pachuca Mines	4	4½
11000 St. John del Rey	15	8½
13174 United Mexican	Avg.	12½

* We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.

LATEST CURRENT PRICES OF METALS.

LONDON, MAY 19, 1848.

£ s. d.	£ s. d.	£ s. d.			
IRON—Bar a. Wales... 6	0	6	COPPER—Ord. bottoms... 0	0	0 11
London... 0	0	7	YELL. METAL SHEATHING 0	0	0 8½
Nail rods... 0	0	8	TIN—Cone. blocks... cut. 0	0	3 17 0
Hoop (Staf.)... 0	0	9	bars... 0	0	3 18 0
Sheet... 0	0	10	Refined... 0	0	4 1 0
Bars... 9	0	9	Straits... 0	0	3 14 0
Welsh cold-blast... 3	10	4 5 0	Banca... 4 2	4	4 0
Scotch pig, Clyde... 2	3	2 4 0	TIN-PLATES—Ch., I.C., box 1	8	1 9 0
Rails, average... 0	0	6 5 0	Coke, IC... 1 14	1 15	0 0
Chairs... 0	0	4 4 0	“... 1 14	1 15	0 0
Russian, CCND... 0	0	17 0	“... 1 14	1 15	0 0
PSI... 0	0	—	“... 18 0	18 5	0 0
Gouref... 0	0	—	“... 18 0	16 0	0 0
Archangel... 0	0	13 0 0	“... Spanish, in bd. 16 10 17 0	0	0

know an exception, with all mining adventurers boldly to set out in the prospectus, "carried on under the Cost-book System;" while several of the conditions laid down for the government of the company are directly opposed to the principles on which that system is based. In an article, which appeared in the Journal of the 1st of April, we there cited a series of rules, which we found to convey the main features where the system is observed, among which the most prominent may be said to be that of holding periodical meetings—say, once in every two months—when the accounts and vouchers are presented, and passed, by the body of adventurers—when calls are made, or dividends declared—and when it is understood that the accounts are made up, clearly showing the assets and liabilities, so that the risk is confined to two months' expenditure—each adventurer having the power of seceding, on giving notice to the purser of such being his intention, and paying his proportionate cost, or receiving his share of the assets. But with 9-10ths, or, we might say, 19-20ths, of the companies formed, this course is not adopted, but the adventure is carried on, with but a slight, and, in some instances, no exception from the scrip system, which holds out so many temptations to dishonest dealing—at the same time that the object of the Legislature, in excepting, by the 64th clause of the Joint-Stock Companies' Registration Act, mining transactions in the purchase, sale, or transfer of shares, from any stamp-duties, in cases where mines are carried on under the Cost-book System, is frustrated; the security which that affords the adventurer not being attained, but an imposition practised under assumed legal protection. It is also an injustice to the nation at large, to exempt mining transactions from the stamp duty, while it is imposed on all railway transfers, without, in the former case, the rule be strictly observed, of working the mine on the Cost-book System, and which should be the office of the Statuary Court to see is the case, or the penalties under the Act, to which we have referred, should be inflicted. Another question arises with us, which is—how far the Cost-book System can be adopted in Scotland, Ireland, or Wales, where no Statuary Courts exist, and where, we may add, the system, in itself, was comparatively unknown and unpractised, until the Joint-Stock Companies' Registration Act became law—when, forsooth, every mine was held to be worked on the principle observed in Cornwall, however ignorant the parties might be of the nature of the system, or how little attention they may have paid to its observance in practice. Indeed, we have no hesitation in saying that, with the exception of mines, the management of which is principally confided to Cornish adventurers, or agents, there are but few which have even the semblance of observing the first rules which apply to the "Cost-book" Principle.

It is solely with the view of directing the attention of the adventurers at large, that we are induced to enter upon the subject. That the system, if observed, is one the most secure, as applied to the employment of capital by a body of persons, affording protection from loss, and a power being given to avoid further liability, or cost—receiving their fair proportion of the value of the ore raised, the machinery, and balance of cash in hand, at any time when the adventurer may be desirous of retiring—there cannot be the slightest doubt; but it may be used as a cloak for abuses, if that the rules be not strictly observed. Such we know to have been the case, and is now daily practised by parties—involving the mine in debt, taking the financial matters in their own hands, which legally should be vested alone in the body of adventurers, and who, as a self-elected committee, govern the concern, hold their meetings, make calls, and forfeit shares at their will and pleasure. That some change should take place, we consider indispensable, for the security of the mine adventurer; and this, we trust, will be the expressed opinion of those most interested ere long.

While on the subject, we would again recommend most strongly to adventurers in no case to execute blank transfers. By so doing, they lend themselves to a deceptive course, pursued by many, which we have described in a former Number. Let them have the transfer filled up; let it be transmitted to the purser, and his acknowledgement received, before even the consideration-money changes hands. There are many reasons for this being done. In the first instance, the purchaser should be satisfied that the party disposing of the shares is a *bona fide* holder, and that the shares have been regularly transferred into his (the purchaser's) name, which in itself would imply that all calls had been duly paid thereon—while, on the other hand, the seller would be satisfied that he was released from all future responsibility by the shares having been regularly transferred in the cost-book. We have known several instances where shares have been assigned—that is, on the transfer paper—to which the party selling had no claim; and, in other cases, where the party purchasing the shares had never registered them, and, consequently, the seller was held responsible for all calls subsequently made. It is sufficient for our purpose to note these circumstances—at the same time, that the parties being thus made known to each other, at least by name, is one not the least worthy of consideration. The agent, or broker, takes his commission on the transaction, and with that he should be content. Such, however, is not all times the case. We do not wish to reflect upon any one individual; but we know such things are done. Every honest broker will accord with us in the opinion we have expressed, and the recommendations given, as tending to encourage legitimate mining enterprise—while, we repeat, it is the duty of shareholders generally to see that rules laid down, or professedly so, be strictly observed.

In our columns of the 6th instant, appeared a letter from a correspondent, animadverting on the proceedings of the Sardinian Government, with relation to the Piedmontese Railway, from which we, in common with our readers, would naturally be led to conclude that there was with the authorities a want of honesty in their dealings. It is hardly necessary for us to say, that our columns are at all times open, whether to afford information of the progress and the successful results attendant on mining, railway, or other adventures, or to note the observations of those who may consider there is cause for complaint, or would suggest remedial measures. Such is the course we have uniformly pursued, and hence our present remarks. The letter of our correspondent, to which we have made reference, conveys an expression which is calculated to militate against the Government, by implying that no dependence can be placed on it; and while we are ready to admit that, in times like the present, folks should be cautious and chary as to the nature of their operations, and the trust they repose in others, more especially our continental neighbours, whether Governments or individuals, yet we should much regret if that any observation which might fall from us, or the insertion of any communication, should have the effect of prejudicing a nation by alarming our manufacturers at home. That caution is necessary, and that such is observed, so far as is practicable, by the English merchant, no doubt can exist; nor is it necessary for any remark on our part to en-gender such caution—while we feel it due to the character of the Journal to state, distinctly, that no consideration could induce us to prejudice a foreign state, much as we love home. Having thus premised the brief observations we would offer on the subject at issue—that of the rectitude of conduct on the part of the Sardinian Government, and the dependence that may be placed on it, with reference to any contracts, or engagements—we are bound to say that, after having instituted inquiries, which we felt to be our duty, so as to ascertain the correctness of our correspondent's remarks, or rather the innuendos conveyed in his communication, or otherwise, we feel much pleasure in stating, upon the authority of one of the first firms in the iron trade, that every transaction with which they are cognizant, and those are not a few, in which they have been individually interested with the Sardinian Government, honesty and probity

have been strictly observed. It is to be remarked, that the state of the continent at the present moment, as compared with some three or four months back, is widely different; and it might be, and doubtless is, injudicious to trust the foreigner without a satisfactory assurance of the contract being duly performed on both sides—not only the supply of the material, but the remittance of the cash; and hence we consider that caution cannot be too strictly observed. It is, we believe, a matter of fact, that in one or two trifling contracts entered into indirectly with the Sardinian Government, they have endeavoured to avail themselves of adventitious circumstances as applying to them, arising from the failures of the contractors, agents, or middle-men; and we can hardly say, that the Government are to blame to the extent which some folks would wish us to suppose, inasmuch that, not being the contracting party, they are not responsible—and hence the desire on their part to make the best bargain. We confess we should like to see a greater degree of liberality manifested; and that, because these agents, or middle-men, had failed, the Government actually requiring the material, they would not swerve from the agreement, or bargain, originally entered into. However, this may be considered as a feather in the scale, compared with a wholesale practice, such as our Turin correspondent would lead us to suppose was practised.

From the information we have acquired, it would appear, that a commission from the Sardinian Government, composed of Cn. SIGISMUNDI, MICHELONI, and SOMERELLO, have been in this country for the past two or three months—having for their object, the contract for locomotives, &c.—but it is hardly necessary to say, that the peculiar position of foreign states, and our relations therewith at the present moment, and for some little time past, preclude any negotiation, or contracts, on a satisfactory basis, as perfect confidence cannot be supposed to exist—and where such is the case, even if business could be done, higher terms would be exacted, to which we can well understand, the commissioners could not submit.

In conclusion, we have only to add, that the assurance given us, by firms, with which the Sardinian Government have had many transactions, is such as to cause us to express our regret, that the letter of our Turin correspondent should have been inserted; if, however, it should appear that the information we have acquired during the past week be wrong, it will afford us much satisfaction to set right in our next Number; for, as before observed, we have only one object in view—that of acquiring and rendering information to our readers, without regard to the interests of any individual, but with the object of being useful to "one and all."

The importance—nay, the absolute necessity—for a sweeping reform in our Patent Laws, has now become almost universally admitted, if inventors and patentees are to be protected by those laws, and if England is to uphold her character as the pioneer of civilisation—one which has occasioned her to be held up to the admiration and envy of surrounding nations. We possess a code of laws under which the jurisprudence of the land professes to secure to every inventor, taking out a patent, such an immunity of manufacture and sale, as shall reimburse him for his time, suspense, and cost; yet, in perhaps a majority of cases, more particularly those of the greatest importance, a party is subjected, during the few years granted him for exclusive sale, to the piracy of the unprincipled; and, at the expiration of such period, finds himself not only minus the 300*l.* or 400*l.* (the expense of the patent in the first instance), but probably saddled with heavy law costs, and harassed, irritated, and well nigh distracted, at the destruction of the cherished expectations of years, and the overthrow of his proudest, fondest hopes. The mode of granting patents, under the existing laws, by which the whole is under the control of the Court of Chancery (a court which, as at present conducted, is a national evil), is highly objectionable; for, by this system, not only has this Court the granting of a patent, but, in case of dispute, afterwards actually sits in judgment on its own acts; and the greatest anomaly is, that a patent is granted one day—a party paying a large sum of money for the supposed privileges obtained—and, on a future day, a decree goes forth from this legal Golgotha, declaring it to be *no patent at all*. In such a case, the unfortunate inventor is not only minus the amount paid as fees, to obtain a secure right in the sale of his invention, but also the legal costs of attempting to punish an infringement of a presumed privilege, granted by the Court of Chancery itself. It does appear to us, that a great and substantial change should be made in these matters—that the present sinecures, two and three deep in the Patent Office, Roll's Office, and Petty Bag Office, be abolished—that the three be consolidated in one office, presided over by a properly-constructed board of scientific men, with a legal functionary of their own choosing, to put them correct in points of law—that the system of registration be so simplified and classed, that there would be small chance of any inventor, with the aid of an agent, unwittingly patenting a plan which had been secured perhaps years before—and last, though not least, that a system of fees be established, which, while they would handsomely remunerate the officials, should fall with less severity on the pecuniary resources of inventive genius. The plan followed in some of the continental states might be adopted with much advantage—spreading the costs of a patent over a term of years, and allowing a patentee to discontinue payment, if he felt disposed to throw up his patent. A variety of minor details would, of course, suggest themselves—some of which will be found in Mr. CAMPIN's proposed petition, published in the MINING JOURNAL of the 8th April. We do trust that the Legislature will take the matter up in earnest—for not only are the existing laws most seriously injurious to the progress of science, but, in their present form, are an absolute disgrace to us as a scientific and commercial nation.

The new Member for Lambeth, who came in at the last general election as a representative of the labouring classes, has very consistently commenced his Parliamentary career by *vetoing*, as loudly as he could, a measure largely designed for the comfort and improvement of those very branches of the active public of which he is the *quasi*-representative. A large and beneficial measure for the labouring man was submitted to the House of Commons, and this popular advocate did the most in his power to trample the life out of it—that is our charge against him: he justifies his opposition to the Health of Towns Bill, on the ground—first, that it aims too largely at centralisation; and, secondly, that the unwholesomeness and immorality presumed in that bill are nowhere to be found. He proves this, as he thinks, by pointing to the clauses, fixing the administrative powers of the bill to a board of gentlemen sitting in London; and by quoting a number of returns, showing that the fifth of England is not greater than the fifth of the continent; nor the amount of profligacy, or the number of illegitimate children, more than in any similarly large population. We might grant him the whole of this, and yet have fifty logical reasons for shutting his mouth, with respect to the bill he has been criticising. If the town and rural population of England are no worse off than the population of other countries, is there, therefore, no reason for our attempting to make them the better off of the two; or, does he think, that taking the poor-houses of England as a whole, they do not present too great a sum of crowding and uncleanness—nor are the instances of basardy throughout these districts at all too many, or too frequent, to make it desirable that, in all these particularities of evil, there should be a diminution.

If his opinions run in this direction, then we can account for his speech, and know in what class of legislators to place his name. But the bill he opposes, so far from having a tendency to suppress or override the local powers now existing, enlarges those powers, and makes their use compulsory. If the language of the clauses was in

any measure doubtful, which it is not, the necessity of the case would have suggested their true import. The bill necessarily gives powers where they are not, and revives and enforces those which have become inoperative; and this, we say, was the necessity of the case—for it was not conceivable, except by the new Member for Lambeth, that the imperial Government should turn national scavenger, and perambulate great towns of the kingdom, broom in hand, in execution of its own statutory measure. He will not believe either, what is almost universally clear to a demonstration, that some 20 per cent. of the licentiousness, and about the same proportion of the mortality, of the United Kingdom, is traceable to the indecent crowding together of the sexes, and the lamentable want of air and drainage, so long noticed, and so fatally experienced. He turns his back on all the evidence on which these statements rest, repeated and sifted though it has been; and says, in fact, that public health and public morality shall receive no improvement at his hands. We regard the subject as being so vitally and pre-eminently a working man's question, that we cannot consider as much less than a public enemy the individual who thwarts the measure of relief purposed, or deepens, by his influence, the roots of this extensive nuisance. Nor are our regrets at all the less serious, that, in this particular case, an individual, who made his way to the House of Commons as the apostle of progress and improvement, should, as soon as he had got there, take up a place among whatever is most stationary and corrupt in the elements of that assembly.

We insert in another column a letter from a correspondent, making an inquiry as to the progress of Messrs. BRETT and LITTLE's Electric Telegraphic Converger, to which, we are happy to say, we can now give a reply. After a period of nearly 12 months, which has elapsed since the system was perfected and made public by the exhibition of beautiful models—during which time the Electric Telegraph Company have had the entire field to themselves, laying down many hundred miles of wire, and establishing stations in upwards of 60 large cities and towns—Messrs. BRETT and LITTLE have now got a chance of affording practical proof of the excellence of their plan—having to lay their telegraphic converger on the Whitehaven Junction Railway, and which, we understand, will be ready for operation in a few days. This is a step in the right direction; and, from all we can learn, if its simplicity and superiority over the "many-wired" one now in operation through the midland and northern counties is established, as we think there is no doubt but it will be, the Whitehaven Junction will not be the only company which will avail itself of the "Electric Telegraphic Converger." A report of a lecture delivered by Mr. LITTLE, at Whitehaven, will be found in another column.

The melancholy accident which recently took place on the Great Western Railway, near Shrivenham, arose partly out of causes which have a permanent existence on that line, though the immediate cause resolves itself into the negligence of the company's servants. The circumstances connected with the working of this great trunk line—which are dangerous in their character, and not of a transitory kind—are the surplus motive-power used on the line, and the pernicious velocity with which the trains are urged forward. In this instance, the public incurring the fearful dangers of the broad gauge for the sole sake of its expedition, the accident, whose deplorable results will have fallen with so poignant a force on many families, was furnished in part from the original structure, and the working elements, of this line. The careless projection of a horse-box, or a cattle truck, on the rails, which were, in a few moments, to receive a rapid express train, travelling at the speed of from 40 to 50 miles an hour, was the immediate cause of the catastrophe; but the real originating causes of it were of older date, and of more constant presence upon the line. The public will have seen, with great surprise, from the proceedings and evidence taken before the coroner's inquest, that the Great Western Company had in their employment, to watch the regular working of the line, and to attend to the signals necessary to be used upon it, men who were habitually stupefied with drink and tobacco. This is the statement of the foreman of the jury; and it is further in evidence, that the superintendent of the Shrivenham station did not know whether a midday express train had as yet passed the point of his especial supervision or not. This is a sufficient amount of negligence and inattention to come out on one inquiry; and we think it no want of charity to conclude, that a more flagrant case may yet remain behind, to deepen the culpability of the next accident. A verdict of "Manslaughter" has been found against three of the company's servants; but no punishment they can receive will, in the smallest degree, efface the calamity to which they have so largely contributed. We trust the verdict will carry a heavy *deodand* against the company, whose remissness has not been without its effect in inflicting this flood of injuries; but, compared with that infliction, and as a counterpoise to it, both *deodand* and verdict are but miserable make-weights. We should be happy to offer to the bereaved families some consolation for the misfortune which has overtaken them, but that is impossible. Nevertheless, resignation will soften the sorrow which they are, for a season, called on to endure. The public will, we trust, look the more watchfully to the removal of all the causes in which such casualties have either their remote or proximate origin.

In the course of next week, the magnificent steam basin, which has been some time in preparation, on the margin of Portsmouth Harbour, will be opened for the accommodation of the British Steam Navy. We have noticed, in the course of its growth, this great and seasonable addition to our national defences, and, for our own parts, do not think there is any security we can take for our shores, or any external means of preserving our rank and estimation in Christendom, equal in condensed efficiency to an augmentation of our floating steam navy. We rejoice at its enlargement for its own sake; but when the genius of our people, and our historical instincts, are taken into the account, no less than that multitude of the mechanical arts which a steam navy attracts into its august train—when these are admitted to their just and natural weight in the question, we have a great preponderance of sentiment and reason on the side of works of the particular description which are just now perfected at the great naval homestead of Portsmouth. It would be all the better, as we think, if in the coast arsenals, means of a similar kind were taken, to build, refit, and otherwise accommodate, the new and vigorous arm of the public service. The Lords of the Admiralty have taken a marked and constant interest in the progress of these works at Portsmouth; and it is their intention, we have reason to believe, to unbosom the depths and capacity of the new harbour in a manner both brilliant and impressive.

GOVERNMENT CONTRACTS.—The past week has been an exceedingly busy one for Government contractors. On Thursday, the Commissioners of the Admiralty concluded the contract for the supply into store of Welsh coal as follows:—Sierra Leone, 600 tons; Fernando Po, 1200; Ascension, 1200; and St. Paul de Loando, 1000 tons. On Wednesday, the Finance Committee of the East India Company closed their contract for the delivery of 5000 tons of various descriptions of English and Scotch coal, to be delivered at Bombay. The tenders were numerous, and the competition greater than usual. Thursday was the last day for the Commissioners of the Navy receiving tenders for the monthly conveyance of the mails to Calcutta and China, and the despatches between England and Alexandria. Hitherto, the Peninsular and Oriental Company have had the contracts; and, as they have been at an enormous expense in building and fitting-up their splendid fleet for these lines, and are, consequently, better prepared for the purpose than any other party, it is probable the competition against them will not be strong; and the Commissioners always profess to decide in favour of parties who are best capable of fulfilling the duties of the contracts.

PROGRESS OF FRENCH MINING INDUSTRY.

[From our Paris Correspondent.]

The unsettled state of the Government, and country, the great scarcity of money, want of confidence, and general stagnation of business of every description, have had a most serious effect on the iron-trade and mining in all its branches. At St. Etienne, St. Dizier, and other large iron districts, the greater portion of the furnaces are only in half blast, and the forges—comparatively speaking, just keeping their hammers going, whilst in the coal mines of the basin of the Loire, Grand Combe, and other large mining departments, very little activity prevails from the want of funds, and a certainty of a sale for the produce at remunerating prices. The proprietors of the smelting houses of the D'Anzin Company have issued the following address to their workmen to conciliate them under the present critical monetary crisis, and to re-assure them of support:—“Working Miners.—Circumstances oblige us to curtail our works, and reduce our extraction of ore; it is an evil which affects us, as well as yourselves, and many others. Not being able to foresee how long it may last, nor its result, we wish, at least, to apprise you of our intentions. We will contend with energy against the difficulties, and restrain as little as possible the works. Notwithstanding the difficulty of sale, and the scarcity of money, we shall strive to ensure the payment of your salaries, and what is requisite for the establishment. Last year we assisted you to struggle against the high price of provisions—this year, it will be against the decrease in labour. We also ensure to your comrades their pensions, and to their widows and children the help that they receive from the generosity of the company. What would become of them, and of yourselves, if it were impossible for us to encounter such pressing wants? It will not be so—we have hope in the future—but the future entirely depends upon the preservation of order, for without that, no industry, no work; and without work, no existence for you and your families. Everything to the contrary is a fallacy, which your good sense must tell you—and it also tells you, that if our establishments were threatened, you would be so yourselves—and their ruin would be also yours. Working Miners.—We have confidence in you, and we confide to you the care of preserving it, and to defend, if requisite, that which ensures your existence and our own. We rely upon you—therefore, rely upon us;—be united mutually to support ourselves—that is true fraternity.” Notwithstanding these difficulties, we are glad to see that the miners and iron-workers are bearing them with resignation, so as not to disturb the public peace, and compromise their establishments. The great cause of the stagnation, is the position in which the major portion of the railway companies is placed in France, for the want of funds to carry on their different operations, and the probability that, before long, the Government of that country will take upon itself the whole management. The Lyons and Nantes Company have found themselves obliged to make a call of 1*l*. per share, since it had been announced that the above project has been delayed for some months only. The railway directors appear struck with apathy and indifference, the contractors are unable to fulfil their engagements from the scarcity of money, the iron and forgemasters no longer receive orders, and the miners are, and will be, cautious in their operations, until it is seen what measures the Assembly will bring forward as to the appropriation, or purchasing-up, of the railways and the modifications in the tariff, particularly as regards the importations of British coal, iron, &c., which, even under the present high duties, are greatly on the increase.

The iron-works of Denain and D'Anzin have been transferred to a new company, in which Messrs. Talabot take a principal part. The company has been formed for 99 years, and takes the interest of the old company. There are to be 20,000 shares divided among the different persons forming the company, in proportion to what they have respectively brought into the concern, either in the works themselves, or in cash. Thus the Messrs. Talabot take 8600 shares; M. Ferret, sen., 3870; M. and Mme. de Montaigne, and Mme. Charpentier, 2580; M. Lelièvre, 1075; M. Harpignier, Blanquet, and Co., 1075; and to the Société de Commerce of Brussels, 2800. A sum of 38,000*l.* in cash has been subscribed by the shareholders.

At the general meeting of the shareholders of the Vieille Montagne, held in Belgium a few days ago, it was resolved—that the directors should raise a loan on mortgage of the buildings of the company; or, in case such a loan could not be realised, that they should issue the 1960 reserved shares—preference being given to the shareholders in the distribution. The directors now announce that, not being able to raise the loan, they have resolved to issue 1460 of the reserved shares, at the price of 1750*fr.* (70*l.*) each—each share being divided into five 14*d.* parts. These shares are to participate in the profits of the company, only from Jan. 1, 1848. Shareholders disposed to subscribe for the new shares, must certify the intention at the offices of the company, in Paris or Belgium, before 30th May next. They will have the preference to the new shares, in the proportion of three-fifths of a new share for two old shares; and after that, in proportion to the amount of their demand. If any shares may then remain to be distributed, they will be allotted to the public in proportion to each demand.

The Great Coal Company of the Loire have held their meeting; but they keep the result of their deliberations secret, until they shall have been submitted to, and approved by, the country shareholders, at a meeting to be held at St. Etienne or Lyons.

BELGIUM.—In consequence of the great depression that generally exists in the iron districts of Liege, Charleroi, &c., and the collieries of Mons, by the falling off in the exportations of metal and coal to France, the Government has given orders for several locomotives, and a large quantity of rails, to the well-known establishment at Seraing, so as to keep the men in employ. The same stagnation in railway operations exists in Belgium as in France, which has placed the mining industry in the critical position it is in. The commission on labour has published its report on the project of law relative to the entry of foreign machinery, locomotives, cast and wrought-iron, &c., and the reduction in the Custom Laws.

COMMERCE IN THE INDIAN ARCHIPELAGO.

The events of the past few years in the China Seas, New Holland, and the Eastern Archipelago, will form an epoch in the history of Britain of the utmost importance, as conducing to her future prosperity and commercial greatness. In the *Mining Journal* of the 4th March last, we noticed the formation of a company, under the title of the “Eastern Archipelago Company,” formed for the purpose of securing the great commercial advantages which now present themselves over a large extent of ocean and territory in the east, of advancing the civilization of the natives of Borneo, Labuan, and other islands adjacent, encouraging the purchase of land by Europeans, and extensive immigration. We have now before us a pamphlet, entitled “Commerce and Free Trade promoted in the Indian Archipelago,” by PHILOPATRUS—London: Smith, Elder, and Co., Cornhill. In these pages the author takes a far more comprehensive view of the subject under notice, than could be comprised within the compass of a newspaper paragraph. He commences with a notice of the formation and progress of the East India Company, showing that, with a vast monopoly in the commerce of the East, it did not extend to a much greater amount than what was done by some private merchants—their whole attention and energies being devoted to territorial aggrandisement, and the support of their political position; and that, as liberal opinions progressed, and trade was thrown open to the enterprise of individuals, so did commerce increase, and in 10 years after the expiration of this company's charter, in 1828, the exports of British produce to India had increased from 3,421,421*l.* to 7,695,666*l.*

The charter, as printed by order of the House of Commons, states the object to be, “for the purpose of purchasing and acquiring, holding, improving, cultivating, selling, granting, or otherwise dealing with and making a profit of land, tenements, and hereditaments, and the produce thereof, in the Island of Labuan, and the lands adjacent; and of working therein all mines, pits, and quarries, and getting and raising all coal, stones, earths, ores, minerals, and metals, and of trading and trafficking therein and therewith; and also with any of the authorities or inhabitants of the said island and the lands adjacent; and of exporting from the said island, or lands adjacent, the produce to arise from the premises, or any of them; and of importing therinto such articles as may by the said company be deemed necessary for the furtherance of all or any of the purposes aforesaid, and of purchasing or hiring British ships, and other ships—for all or any of the purposes aforesaid.” This charter, it is remarked, confers no monopoly on the company—all her Majesty's subjects will have an equal right to trade to Borneo and other islands, and will enjoy the protection of the Government in every respect.

The first object of the company will be to develop the resources of the great coal-field, of 150 miles in extent, which will afford the utmost benefit to ships frequenting these seas, and will, doubtless, be the means of establishing mail communication from Singapore, through Torres Straits, to Sidney. The pamphlet proceeds to remark on the exertions of Mr. Brooke, in his endeavours to advance the interests of the natives, as well as the settlers; his success in the suppression of piracy, once so alarmingly prevalent in these seas; and his anxiety for the general improvement and success of the colony. It is probable that this company will eventually prove one of the most successful, in a pecuniary point of view, in the kingdom; and to all who are interested therein, or in the welfare of our eastern possessions, the pamphlet under notice cannot fail to be read with pleasure and advantage.

IMPROVEMENTS IN SMELTING COPPER AND OTHER ORES.

[Specification of patent granted to William Birkyre, of South Down, Cornwall, chaser, for improvements in smelting copper and other ores. Enrolled May 16, 1848.]

My invention relates to the common ores of copper, silver, lead, tin, and antimony, which ores are usually sulphurates, or arsenicures, and occasionally arseniates, carbonates, and oxides of some of the said metals; but the ores which are best adapted for the improvements herein described are sulphurates and arsenicures, and are well known to chemists and others under the names of copper pyrites (sulphuret of copper and iron), copper glance (disulphuret of copper), variegated copper ore (disulphuret of copper and sulphuret of iron), tin pyrites (cuprous sulphuret of tin), white copper ore (arsenite of copper), fahle ore (sulphurets of copper, arsenic, antimony, iron, zinc, and silver), argentiferous sulphurates of copper, lead, and antimony; and also, but in a minor degree, to the peroxide of tin, and the carbonates and oxides of copper, when they are contaminated with sulphurates, arsenicures, and arseniates; and in order that this invention may be fully understood, I now proceed to state, that it has for its objects—first, to abate the nuisance arising from the volatilisation of the sulphur in the state of sulphurous and sulphuric acids; and the arsenic, either in the metallic state, or that of arsenious acid, in the ordinary process of smelting copper; and to save about two-thirds of the sulphur of the common ores, by converting it into sulphuric acid, and the most part of the remainder of the sulphur into salts, formed of sulphuric acid and the oxides of copper, iron, or zinc, by roasting the common ores of copper, in a pulverised state (fine dressed copper ore), on trays in iron pyrites kilns, by the heat evolved during the combustion of iron pyrites (mandic)—thereafter to lixiviate, and to extract, by the well-known processes of cementation, or electro-metallurgy, $\frac{1}{2}$ per cent. more pure copper from $7\frac{1}{2}$ per cent. ores, than is obtained by the ordinary process of smelting; and, by the same processes, to extract silver from the sulphuret of silver, and particularly from sulphuretted copper ores, as have been proved rich in silver by assay or analysis; secondly, instead of using a nitrate and sulphuric acid alone in a nitre-pan, in the ordinary way, to mix on a tray a nitrate (in the same proportion, relative to the sulphur, as heretofore) with any of the above-named ores; then to calcine the mixture on the said tray in a mundic kiln, so that the nitrate of potash, or of soda, shall serve, at the same time, to supply the vitriol chamber with the deoxidized or other oxides of nitrogen (indispensable in the manufacture of vitriol on the large scale), and to oxidise at least a portion of the sulphur and the arsenic of the ores, by converting them into a sulphate and arsenite of potash, or soda, which may be separated by water.

In the extraction of copper, by roasting the common ore of copper (copper pyrites, usually impure, containing sulphurates of zinc, lead, and other metals, also arsenicures, with siliceous matters), it is comparatively easy to volatilise the sulphur of the iron and zinc, in the state of sulphurous and sulphuric acids, especially from the former metal; but the sulphur, in combination with the copper, becomes, in a great measure, sulphuric acid, by combining with oxygen; and the copper, being oxidised, the acid and oxide combine to form a sulphate of copper, as I have found by experiment; and the acid adheres, with great tenacity, to the oxide of copper; and it is from this cause that so many roastings, meltings, &c., are required to free the copper from its sulphur, in the common process of smelting copper. I have also found, by experiment, that the sulphate of copper may (after the common ore has been submitted to a strong heat) be easily dissolved out nearly pure, at a lower heat—however, the roasted ore may contain more of sulphates of iron, zinc, or silver, than sulphate of copper.

I now proceed to state, according to my experience, the best manner of carrying the above improvements into effect. The iron pyrites kilns are to be constructed of the common form, but which it is unnecessary to describe, as they are well known. I would, however, recommend that the ash-pit be provided with iron, or leaden, cisterns, for holding water, in order to abate the temporary nuisance of the sulphurous and sulphuric acids, when withdrawing the ashes of the iron pyrites, and which cisterns should have a sliding cover, to prevent the undue evaporation of water into the kilns.

The outside dimensions of the pair of kilns (for the quantities herein-after directed to be operated upon) may conveniently be—in length, 13 ft.: breadth, 7 ft. 4 in.; height, 9 ft.: the inside diameter of each kiln should be 5 ft., and is best constructed in the form of an octagon, and lined with fire-bricks. In each kiln there should be placed, upon two or three stout iron bars, just above the charging-door for the mundic, an iron, or copper, tray; or one of iron, coated on the inside with stoneware, or porcelain; which tray should be $4\frac{1}{2}$ ft. long, by $3\frac{1}{2}$ ft. wide, with a rim 3 or 4 in. high. These dimensions readily permit the hot air and the acids to pass through the pipe, at the top of each kiln, into the vitriol chamber. The charging-doors of each kiln, should be provided with an air-hole and a sliding damper, as much of the success of making vitriol depends upon the admission of air above the mundic, as well as that which is required to pass through the ash-pit, to support combustion. At the side of each kiln, and on a line with the tray, there should be a narrow opening for the tray, containing the roasted ore, to be pulled out, and then emptied for lixiviation into a lead cistern, placed about 3 ft. below; which cistern should be supplied with hot water from the cooling cistern of the kilns. After which, the tray may be charged anew, with a mixture of lixiviated and fresh ore, either by a shovel, or by a hopper at the top of the kiln. The vitriol chamber, for this pair of kilns, may be $150\frac{1}{2}$ ft. long, $11\frac{1}{2}$ ft. wide, and 8 ft. high; and the length divided into 3 parts (technically, bottoms). The first compartment, that which is nearest to the kilns, should have its acid kept apart, being comparatively impure; while the acid, in the 2d and 3d compartments, is equal to that from the best sulphur. The above dimensions of kilns and vitriol chamber, are sufficient, for the one to calcine two tons of copper ore per diem, and the other, to make, in the same time, from the copper ore and mundic, three tons of sulphuric acid, sp. gr. 1.847.

As much uncertainty prevails as to the hourly produce of vitriol in a chamber, I recommend the following arrangement, which will show quickly and accurately the produce of vitriol. For each compartment of the vitriol chamber, there is required a stout glass tube, about 22 inches long, which is bent at 6 in. from one end to a right angle; and the long side (16 in.) graduated into inches and tenths. The short leg of the tube is then inserted into a piece of $3\frac{1}{2}$ in. lead-pipe (previously soldered into a hole, close to the bottom of the turned-up lead), so as to penetrate to the inside of the chamber, and the space between the tube and the pipe made tight by luting. About a foot from each of these glass tubes is fastened a double-curved lead syphon—one leg of which is inserted under the bottom of the side lead of the chamber—which syphon is supplied with a mouth-piece, and has at the top bend a small orifice for admitting air. In taking an observation, it is first necessary to blow down the graduated tube to expel the acid into the chamber; on withdrawing the mouth, the true depth of the inside of the chamber is seen on the tube; then, by placing the forefinger of the one hand on the small hole of the syphon, and with the other closing the lower aperture, and withdrawing the air by the mouth-piece, the acid quickly flows, and continues so long as no air is admitted by the small aperture. On testing this acid by the hydrometer—which, however, should be occasionally compared with a standard hydrometer, or a specific gravity bottle, as vitriol corrodes the common flint-glass hydrometer much more than alkali—the real strength of the acid is known, and the produce determined.

[To be continued in next week's *Mining Journal*.]

MINERAL WEALTH OF ALGIERS.—MM. Elie de Beaumont, Dufresnoy, and Barnard, have presented to the Paris Academy of Sciences a report on a communication made by M. Fournel on the mineral wealth of Algiers, founded on personal survey. M. Fournel says—“As to the situation of iron ore, indications are found near the Cap de Garde; but in the mountains of Bou Fazira in the small chain of Belhilia, and in the mass to the north of the lake Fazira, the developments of ore occupy an importance worthy of considerable attention. Throughout a distance of four leagues, the crappings-out of a considerable number of beds of ore may be observed, attaining sometimes a considerable size, and never less than from four to five yards in depth. At the north of Fazira there is an entire mountain (the Moha El Hadad, or iron quarry), which rises out of the gneiss, and literally presents from its base to its summit

—that is to say, a height of about 108 yards—one mass of pure oxide of iron, without the admixture of any other substance.” To the east of this mountain, M. Fournel traced upwards of 16 points where the ore cropped out. M. Fournel has also found large quantities of ancient scoria, uncontestedly proving that these sources of mineral wealth had been worked by the Romans, or perhaps, by the Vandals; there are also scattered amongst these scoria specimens of the metal produced—so that by analysis it can be ascertained from which bed of ore the metal produced at such and such a point was obtained. Pliny does not appear to have been aware of the existence of these iron ores of Numidia. Ibn Haneef, a writer of the 10th century, has, however, mentioned them. The period, therefore, of the metallurgical operations at these places, must have been between these two epochs—the 1st and 10th centuries.

Original Correspondence.

COPPER SHEATHING—ITS WEAR AND WASTE.

SIR.—There is a question which, if agreeable to you, may be opened in your columns for discussion—not only as interesting to your mining metallurgic, and shipowning readers, but as likely to attain more elucidation and development there than in any other periodical. It regards the truth of the alleged deterioration of recent copper sheathing for ships—and, if true, then its causes; and third, and lastly, its remedies, or the means of restoring, or improving, upon the good qualities of the older sheathing. These three divisions may be conveniently taken separately—as well for the sake of conciseness and clearness, as for their application to somewhat different classes of readers. The present letter may, therefore, be directed only to the truth of the report, and addressed to shipwrights, shipowners, and especially to old masters of vessels. It is, indeed, matter for regret, to use no stronger term, if, while other manufacturers are improving at an unprecedented rate, copper smelting—in few, wealthy, and highly intelligent hands—should be, and has been gradually failing off. If such be the fact, its exposure will not be long in leading to its correction.

That, in the Royal navy, copper does not wear so well as 20 or 30 years ago, is fully ascertained; but whether this is attributable to intrinsic defect in the new metal, or to the conditions and circumstances of its application and use, is not so clear. The merchant shipwrights I have not found so decided on the subject, and should be glad to obtain, through your columns, their opinions and observations upon it; especially if illustrated and supported by well-stated cases. It has been frequently observed in the navy, that the coppers which wear best cover themselves with a firmly-adhering scale, or crust, of a pale green; whilst the worse wearing keep bright, or take on a soft blue crust, with patches, or edges of purple. Is merchant sheathing observed to wear cleaner and brighter now than 14 or 20 years ago?

With respect to the quality of metal—I have been called on to analyse many specimens of good and bad wearing sheathing, old and recent, and to examine a great many more; and have not found, in the analyses, any characteristic, or constant differences, between the bad and the good; nor have those which wasted quickest, or wore worst, at sea, been uniformly, or decidedly, more susceptible to corrosive agency, in the laboratory, than the very best old samples.

This would indicate the waste being due rather to the conditions of use and application, than to defect in the metal; but to come at something nearer to certainty, I have now between 20 and 30 samples, distinguished for good or bad sea wear, affixed to a buoy in the tideway, under exactly similar conditions; and, when these come to be stripped off, if the greater or less waste correspond with their previous sea wear, it may be then fairly referred to quality of the metal, and will form a more trustworthy ground for analytical inquiry. Meanwhile, useful light may be thrown upon the research, by comparison of facts, notes, and observations, in your valuable columns; but as the term “conditions” is often used to cover the want of definite ideas, it may be right briefly to enumerate the sort of conditions here meant:—1. Friction; from heavy shore work, faster sailing, or more active service. 2. Corrosive waters; as the drainings of mines, manufactures, or sewers, or putrescent organic matters, in the sea itself. 3. Climate; corrosive action being increased by heat; and the copper sheathing is well known to waste most rapidly in tropical climates. 4. Weather; especially electrical or thundery, which often increases chemical action. 5. Electro-chemical protection, or the reverse; by the nails and other metallic articles, in contact with the sheathing, having different electro-chemical quality. 6. The tar, or other material, with which the bottom is paid; under the sheathing, having acid, alkaline, or neutral re-action. 7. The timber itself of which the bottom is built; some wood having a good deal of acid quality. It is not intended to limit the extrinsic circumstances affecting the wear to those here enumerated, but only to convey some distinct notions on the subject. Doubtless, others will have occurred to attentive observers, which, brought together, and compared in your columns, may throw light on each other; and, in asking such information from others, my own share shall not be withheld. From what I have hitherto collected, I am led to infer that, whilst much of the increased wear and waste are due to friction and corrosive action in the waters, &c., the metal itself has undergone some unfavourable change, in either the chemical or the mechanical processes of manufacture; but there is so much to be said on the other side, that this inference is quite open to correction.

Plymouth, May 13.

J. PRIDEAUX.

GALVANISED IRON—MR. NASMYTH'S EXPERIMENTS.

SIR.—In the *Mining Journal* of last week there is an interesting letter from Mr. James Nasmyth, detailing the results of an investigation which has been lately made, at the desire of the Lords of the Admiralty, by their committee on metals, with the view of ascertaining whether wrought-iron, which had been subjected to the process of galvanisation, by being coated with metallic zinc, would be deteriorated as scrap-iron for remanufacturing. The clear statement given us by Mr. Nasmyth proves, most satisfactorily, that the presence of zinc in wrought-iron, so far from being destructive to its strength and tenacity, actually improves its quality in a very important degree. The perusal of this letter has just recalled to my mind one of the numerous schemes which I had devised for the use of anthracite coal—viz.: the preparation of pure oxide of zinc, to be used as paint, for iron-work more especially, making joints, &c., in lieu of white-lead. If people could be once induced to make a trial of anthracite coal, worked by a blast for several manufacturing operations, the value of this peculiar fuel would be established. It only requires beginning; it is quite possible to treat the sulphur of zinc—a very abundant ore, known as blonde, or black jack—so that pure oxide of zinc and sulphuric acid should be prepared by the same operation. This would be a very profitable business, and create a consumption for a considerable quantity of the ore; but at the present price of the metal, it would even pay handsomely to prepare oxide of zinc from spelter. Say, in round numbers, 4 cwt. of spelter, worth 2*l.* 16*s.*, would yield 5 cwt. of oxide of zinc, which, at the price of dry white-lead, would be worth 6*l.*; the cost of labour and fuel being trivial, there would be a profit of something like cent. per cent. While upon this subject, I will mention another idea which occurred to me in connection with it; I believe it is a desideratum, to find some material to cover the bottoms of iron ships, to keep them clean—that is, to prevent barnacles, &c., adhering to the iron in hot climates. It would be easy to prepare a pure oxide of copper, which could be ground into paint with linseed oil. I propose to paint the iron first with zinc, and afterwards with copper. Your useful paper being the organ of the mining interests, I am induced to make these suggestions through the medium of its columns. I am no electrician, so leave the consideration of the above arrangement to those who are. I have been long endeavouring to bring anthracite coal into use for treating different ores, but more particularly those containing volatile bodies, as arsenic, sulphur, and zinc. I have met with no encouragement from the anthracite proprietors—our views seem to lie quite in opposite directions. I was sitting at breakfast, the other morning, with one of the most spirited and enterprising of them in this district, when he said very seriously he would be ready to spend 100*l.* upon getting anthracite introduced into London for cooking chops.—T. H. LE

BORING BY STEAM.

SIR.—Being a constant reader of your valuable Journal, my attention was arrested by a letter from Mr. Gard, in your Number of the 29th ult., respecting a patent, which he had taken out, for "Boring by Steam."

It would be well if all inventors would consult the records of the Patent Office, to see what others had done before; no doubt it might save a considerable amount of time and money. I have an idea that it may be on the very heels of a patent, taken out by W. and C. Mather, of the Salford Iron-Works, Manchester, in January, 1846. Though there is no claim to the principle of "Boring by Steam," rope, or chain, in the abstract, yet this plan is adopted by us, in conjunction with our patent boring apparatus. By way of information to your numerous readers, especially to your correspondents, Mr. J. B. Wilkin and "Steam," we beg to say, we have succeeded in boring, by our patent machinery, something considerable in the way of *Artesian* boring, either for water or air-shafts, &c., for mines. Having been for some time fully alive to the desirability of accomplishing this object, at something like a moderate cost, it led us to consider and improve upon the old and tedious method of boring with rods—it being so unmechanical and antiquated; besides the enormous amount of time and labour consumed, to go any considerable depth; and the great uncertainty of succeeding, from the great risk of losing the tools down the hole; also, the size of the hole being generally so small, that it must require an immense pressure to discharge anything like an adequate supply, in proportion to the cost of obtaining it. These leading defects in the present system, led us to consider and improve, and thus take patent for such improvement. Now the principal feature of our invention is, just what your correspondents seem to think so very desirable—viz.—"steam boring"—and, considering the time required to bring any new thing to a satisfactory bearing, we have succeeded in boring two holes, 16 in. diameter; one, 117 yards deep; and the other, 170 yards deep; and having obtained an excellent supply of good water from the latter, it prevents us going deeper at present.

The machine is worked by a steam-engine, 3-horse power, and the method we adopt is upon the percussion principle. The boring-head is about 20 cwt., and is attached by a flat rope to a winding on drum. The head is lifted by a cam, or wiper, and lets fall by its own gravity. The peculiar feature of this boring-head is one part of our claim; and it is so constructed, that at every blow it strikes upon the rock it turns round about $\frac{1}{4}$ th of a revolution—thus making the cutters never to strike twice together in the same place; after it has penetrated about 12 or 14 in., or as the strata will admit, it is then withdrawn; and another part of our patent apparatus is let down, and, in a few minutes, the whole of the pulverised rock is brought up, varying in size to 12 in. circumference. The cutter block is again put down, and set to work, and so on, *ad infinitum*. With this plan of boring, the hole may be varied in diameter, from 12 in. to 3 ft.; and to parties interested in boring, we would particularly solicit their attention to the leading features of this improvement—viz.: economy and dispatch.—C. MATHER: *Salford Iron-Works, May 13.*

P.S.—As a reply to your correspondent, "Steam," respecting the applicability of boring on Mr. Nasmyth's steam-hammer principle, we beg to state, that that gentleman was invited to inspect the present machine in full operation; he was then consulted as to the utility of using the hammer principle, and he kindly consented for us to try it, if we thought proper.

SIR.—Since writing the preceding letter, your Number of the 13th inst., came duly to hand. In it I find a description of Gard's machinery for boring by steam; and, much to my surprise, judging from the description, he has included in his patent some portions of his machinery which we have had at work more than three years, though, in our patent, we make no claim to any arrangement of machinery above the ground, either for giving the percussion blow to the cutter-block, or for the winding-up apparatus. Yet I humbly conceive he has specified the "wiper," or cam motion, for lifting the borer—a part of our machine, which we embody on a much better principle. Judging from the description, we consider our plan of working the cam much superior; in fact, altogether, as a whole, our machine is much better, independent of what we claim as our patent and merit of construction—viz.: the turning motion of our boring-head, which I described in my last letter. But, as I said at the outset of my former epistle, how important it is to see what has been done before, as you and your numerous readers well know, a patent cannot be taken for a thing that is daily and openly in full operation long before for the same identical purpose.

If, Mr. Editor, you should think our machine of sufficient interest to merit a place in your valuable Journal, we shall be happy to send you drawings, together with a full and lucid description of the same.

Salford Iron-Works, May 18.

COLIN MATHER.
[We shall be happy to devote space for the description and drawings of Mr. Mather's invention.]

THE ELECTRIC TELEGRAPH.

SIR.—When we consider the simplicity and almost perfection to which Prof. Morse, in America, has brought his system of telegraphic communication, although extending over some thousand miles of railway, and having witnessed the system adopted and patented by Messrs. Brett and Little, in this country, it does appear not a little singular, that the Electric Telegraph Company, who started with the evident intention of monopolising everything before them, should have wilfully adopted the most complex of any of the plans yet patented—that of Cooke and Wheatstone. Now, I am willing to accord every credit to these gentlemen, for the great perseverance and research evinced by them in establishing, in this country, the practicability of instantaneous communication, by means of electricity; but improvement upon improvement succeeded, and the consequence is, that this, which may be called the original system, is crude in principle, and uncertain in operation—employing a multiplicity of wires, by which the communication is rendered complex and difficult to execute.

The present position of the company may be judged of from the fact of their finding the commercial portion of the business a failure—indeed, to such an extent, that numerous employés at each of their stations, throughout the kingdom, have been discharged. Not being acquainted with Messrs. Brett and Little, could you, or any of your correspondents, inform me, through your valuable columns, whether anything has yet been done to establish their system of telegraph on any of our lines? If not, I think now is the time to press its advantages on the consideration of the public. I have witnessed several plans in operation; and, for simplicity and certainty in action, the latter is, in my humble opinion, by far superior.

Fenchurch-street, May 17.

A RAILWAY SHAREHOLDER.

THE LATE ACCIDENT ON THE GREAT WESTERN RAILWAY.

SIR.—The frightful accident which has lately happened on the Great Western Railway at Shrewsbury, is only the harbinger of others that will occur from the same cause—namely: obstructions on the rail; and it will from time to time be thus, until the passengers and goods trains run on distinct, separate lines. For perfect safety, there ought to be two lines for passenger carriages, and two for goods trains. It may be said, that a great expense would attend such an arrangement, both as to an extra quantity of ground, and two additional lines. Be it so; but the question is, whether railway companies, which have monopolised the entire carriage of the kingdom, are not bound, at any expense, to protect the lives and limbs of travellers, who have no other means of transit now left to them?

May 15.

ON CONDUCTING RAILWAY TRAINS WITH SAFETY.

SIR.—In your Journal of the 5th of February last, you kindly introduced a letter of mine, containing a plan for conducting railway trains and communicating with the passengers. Had my suggestion, as to the conductor being placed in front of the whole train, been followed up, the late deplorable accident on the Great Western Railway would not—could not—have taken place. The conductor of a train ought to have the sole superintendence of that train—sitting in front of the engine driver, he ought to see that the road is clear, leaving to the other only his own duty to perform, which is quite enough—that of driving a train 55 miles per hour. A simple arrangement would enable the conductor to convey instantly what he wanted to the engine driver, who should either drive slowly, reverse the engine, or stop if required. And, surely, the expense is a mere nothing, compared to the risk of life and sacrifice of property that is every day made, for want of a simple, but yet effective precaution. I cannot understand why a conductor is placed behind, instead of in front, of the train he has to conduct. A coachman does not go to the guard's box to drive a coach, but he is very properly placed in front, where he can command the road, and see what is before him; hence, we seldom find him coming in collision with other carriages; and, I believe, if my own, or some similar plan, were adopted, we should have very few accidents occurring from collisions,—and if any, they would arise solely from carelessness, and subject the parties to severe punishment. I am certain, however, that the fact of a conductor being in

the face of the danger, likely to occur from his own carelessness, would make him attentive to his duties. I hope these remarks may lead to an introduction of some better means being taken for the safety of the public.

Abergavenny, May 15.

JAMES TODD,
Engineering Surveyor.

RAILWAY POLICEMEN.

SIR.—I think a hint from you, in your valuable Journal, to the railway directors, and those concerned in employing police on the lines, would, perhaps, be of some service. I am given to understand, that in choosing the men, they must be of certain height and certain age. Would it not be better to choose a man filling so responsible a situation as this—and it must be remembered, that *life* depends on the ability and intelligence of the party—more for his qualifications than his height? The man who is only 5 ft. 6 in. high, with good qualities, is rejected, because he did not grow 2 in. higher. It is to be hoped the time is not far distant, when the 5 ft. 6 in. man, who is, in every respect, intelligent and well capable, will be able to fill situations on the different railway lines: seeing the continuance of great sacrifice of our fellow creatures, which, in many cases, occurs through neglect and stupidity of those who are employed, I think we should have more caution exercised in choosing men to fill these very responsible situations.

THOMAS NICHOLLS.
Bedford Iron-Works, Tavistock, May 18.

REFORM OF THE PATENT LAWS.

SIR.—In undertaking the advocacy of the general interests of inventors and patentees, I was actuated simply by the idea, that that highly-meritorious body of men, drawn from all ranks of life, were, in respect to their inventions, under the ban of a law, or rather practical system (for the theoretical part, or law, properly so called, is as good as any in existence), which appeared to me might, without revolutionising the existing state of things, by some judicious alterations in the practical part, be rendered in its operation equal to its profession—namely: a system of encouragement to inventors to exertion for the public good. Indeed, I confess myself one of those who see much wisdom in our ancient laws, and who desire rather to have their *true* principles carried out in a beneficial manner, than to start at once, *de novo*, upon new principles and practice, which may, on the morrow, be found entirely erroneous. Thus, I have not, in my petition, asked for any organic change in our laws; but, simply, that an inventor may be assured, without delay, upon showing he has an invention, which he states will be of public benefit, the temporary exclusive property therein, without first of all requiring him to pay a large sum of money; but, on the contrary, arranging the payment of fees in such a way that, without diminishing the total revenue therefrom, they shall in few, if any cases, press too heavily upon the needy, but ingenious, inventor; and, further, that some measure of reform be added, as regards the enormous expense which is now required to maintain patent property before the courts of law. Such being my views, though equally desirous to see the inventor—aye, and "the improver" too—substantially rewarded, or repaid, for his exertions, I am, with respect to it said, opposed to Mr. Craddock and Mr. De la Haye, as regards the organic change in our laws required to assimilate patent right to copyright. But, independent of my own convictions on the subject, I can see that an advocate for a too sweeping change, would, in the present state of our Legislature, be almost sure to be wholly non-suited.

Mr. De la Haye, in No. 663, has some remarks in support of Mr. Craddock's opinion—however, I need not fill your space with any reply thereto; because, I think, he will find that my reply to Mr. Craddock (inserted in the same Number) will operate as an answer to his communication; but I cannot forbear expressing my thanks to him for the interest he takes in my efforts in this truly important matter.

In your last, I noticed a communication from Mr. A. Campbell, secretary to the British Inventors' Protecting Company—and upon the subject he writes about, I would wish to say a few words. My experience tells me, that such an association as he speaks of would, under the present system, prove a real blessing to inventors of small pecuniary means; and even if the Government dues on patents be moderated, such a society would be of the greatest utility; for to pay the Government dues is not all an inventor has to do. In order to reduce crude ideas to practical realities, he must make drawings and models, and, in many cases, call in the aid of professional men—all of which is attended with considerable expense. Again, a person who does not move in the particular sphere in which his invention is to operate, would fail in getting his invention into work, if it depended upon his own unaided efforts. But an association, that is to be the rendezvous of inventors, would be a dépôt, where all parties might apply; and if the society be energetic, and have the assistance of an intelligent and active secretary, &c., it will do more towards a true and beneficial organization of labour, than Owen, Louis Blanc, or any other of the numerous would-be encouchers, who seek to restore the Golden Age.

210, Strand, May 18.

F. W. CAMPIN.

METROPOLITAN SEWAGE MANURE.

SIR.—In the *Mining Journal* of the 6th inst., you inserted a report of a meeting of the Metropolitan Sewage Manure Company; on a *prima facie* view of which, from the economical proceedings of the directors, and from the state of the finances, the prospects would certainly appear not discouraging. There is, however, a question arising from the establishment of works such as those under notice, a satisfactory answer to which, from any of your correspondents, would, I know, prove of considerable interest to many of your readers. The directors' report informs us, that the Commissioners of Sewers have conceded to the company the right under the Act of Parliament to the metropolitan sewage, and from their having purchased two engines, pipes, &c., and caused the market gardens and fields in the neighbourhood of Fulham, to be surveyed, we may conclude that the numerous would-be encouchers, who seek to restore the Golden Age.

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think there are no grounds to apprehend any difficulties. A furnace, which was fired for 20 hours with a strong heat (about 600°), was in good order, without its surface having been perceptibly melted. There is no doubt that a wind-furnace would be much more favourable for this experiment, as every portion of the charge would successively descend into the hottest part of the furnace.

As regards the quantity of fuel used, our experiment led to no certain conclusion by which an operation in the larger scale could be judged; the drying and reheating the furnace after every charge, and the form of the furnace itself, produce less results than can be expected in a wind-furnace constantly at work. In this point, it is an important fact, that the sulphur, as a sublimate, follows the gaseous stream, by which the necessity is avoided of keeping the gaseous stream in a state of temperature above the boiling point of the sulphur when it leaves the furnace. There was no difficulty with the condensation. The cooling process was principally performed with a cast-iron plate over the forms, D, D, in which a slight jet of water was conducted. Any establishment, conducted on a large scale, would combine with this a manufactory of vitriol; and the warmth at present lost would serve to heat the pans. The collection of the sublimate of sulphur, on a large scale, would require several large chambers. Although these might very well be constructed of wood, yet it would be cheaper and better to use other materials, and, by suction, cause the gases to pass through the water. If, as previously mentioned, there was too great a quantity of sulphurous hydrogen, such a combination by water would be inevitably necessary, in order to produce the mutual decomposition. If the sulphurous hydrogen is to be used in this stage of the process, in most cases some mechanical vehicle will be required.

Eckmann's generator appears to be an excellent apparatus. We would advise, in order to prevent the too frequent development of sulphurous hydrogen, that the fire should be directed upwards: by this the flame would contain more steam, instead of hydrogen gas; and the development of the sulphurous hydrogen would be confined to that which issues from the steam and the sulphur of iron. It is unnecessary to remark that, with this process, there is no danger of explosion, as is to be feared by the usual sublimations, as all the apertures are filled with an excess of carbonic acid, &c.

We are of opinion, that we have given all the data necessary to carry out an establishment on a large scale; and we believe we have good reason to recommend the erection of such works. As far as we can judge, it only depends on a proper mechanical arrangement to treat mundic ores of all sizes, and to deliver a maximum of sulphur with a minimum of fuel and wages, and to produce it in tolerably large quantities. If we calculate the proceeds of sulphur by the above process to be 15 per cent. of the weight of the ore, and the smelting charges of 100 skippound of ore, under unfavourable circumstances, to be 15 species*, freight and commission to foreign ports 80 species (which is the highest price that it can cost, to realise 100 skippound ore), it will cost 45 species. The cost from Foldal to Trondhjem is about one species one mark; and from Trondhjem to England, or a German port, four marks per skippound. At the above cost as much flour of sulphur and bar brimstone could be sent into the market as we could hope to find a sale for; but, not to be too sanguine in our expectations, we will consider the whole sold, as raw sulphur, at 45 species. The produce of 100 skippound ore and 15 skippound sulphur would realise 65 species; from this is to be deducted smelting charges, carriage, and freight, 45 species, which leaves 20 species for the mining charges on 100 skippound mundic ore: 100 skippound, or about 90 barrels, is less than three-fourths of a cubic fathom of ground, when from this about 15 per cent. is deducted for the dressed copper ore and attle. It is, therefore, clearly to be seen, that in our large mundic lodes, even under unfavourable circumstances, the net proceeds of the sulphur will be sufficient to cover the mining charges, even where isolated shafts are used.

What can be saved in smelting, freight, and mining charges, as well as the improved manufacture from raw sulphur to flour of sulphur, or bar brimstone, must be a clear gain; where these large lodes occur on the sea coast, as in several instances, the profit would be something considerable. A certain profit, at all events, would be the copper ore obtained, and the security with which the mining operations could be conducted, in the hopes of meeting richer lodes of copper; the residuum, after the distillation, would likewise give good returns. Some idea may be formed of the importance of this subject, when it is well known that our lodes of mundic are never without being accompanied by copper. It is very seldom that the poorest lodes are explored without containing one-half per cent. of copper, and in general the average is above 1 per cent. According to Mr. Stromer, cobalt is tolerably general in these lodes. In the iron pyrites from Sverdrup, Inset Roros, and Foldal, it has been found in such quantities, that it has coloured strongly the vitriolic iron. Mr. Stromer has fixed the per centage of this to be 0.001 of the mass. Little as this appears, there is a considerable value, well worthy of our attention, if it can be realised; and there is no doubt that such a result can be obtained, as in the sulphurous hydrogen we have the means to separate both the copper and the cobalt from their solutions, and, at the same time, to convert this otherwise useless matrix to an excellent material for vitriolic iron.

It will not be uninteresting, in order to judge of the value of the mundic lodes, to calculate the amount of the products that could be realised, and the prices they would fetch. As we are most acquainted with the mine at Foldal, we chose that. This mine has produced, at the cost of 2000 species, about 25,000 skippound of stuff. Of this quantity, about 10-76 per cent. has been thrown out, which, for the most part, contained no traces of copper. Of the remaining 89-24 per cent., which makes a quantity of 22,310 skippound, 37 per cent., or 825 skippound, was one for smelting, at 8 to 4 per cent. of copper, and 21,485 for calcination (*Kjernerostring*). This gave 10 per cent., or 2148 skippound, containing 8 to 4 per cent. copper, and 58 per cent., or 11,461 skippound refuse, containing, at least, ½ per cent. copper, and about 1-1000th oxide of cobalt, both in a soluble form. This last contained, besides, about 20 per cent vitriolic iron, or 2292 skippound, and 15 per cent., or 3200 skippound sulphur. The produce of the 22,310 skippound (which is worth realisation), would give the following results:

3200 Skippound sulphur, at 45 species	14,400 species.
2328 " vitriolic iron, at 3 species	6,876 "
67 " copper, at 60 species	3,820 "
2973 " copper one calcined, at 30 per cent., equal to 104 skippound copper, deducting 25 per cent. for smelting charges	4,580 "
3520 lbs. oxide of cobalt, at 4 species	14,080 "
Total	43,456 species.

This sum is equivalent to the value of 724 skippound copper; divided on the above 25,000 skippound stuff, it will give an average of 2·9 per cent. of copper.

[The necessity and importance of converting to some useful purposes the quantities of mundic lying useless in this country, having long attracted the attention of several of our scientific men, has induced us to give publicity to the above paper. The writer (M. Sinding) is a gentleman well known in the Scandinavian peninsula for his scientific attainments, and who lately remodelled the Government silver smelting-works at Königsberg. Though we cannot be so sanguine as the writer is as to the results of his trial, we think that his information may give some useful hints to those interested in the conversion of mundic, and its ultimate application.]

* A skippound is equal to about 250 lbs. avoirdupois.

† A species is equal to about 4s. 6d.

IMPROVEMENTS IN CASTING IRON PIPES.—Among the numerous inventions and improvements in the various manufactures and processes to which iron is applied, which have taken place within the past few years, one of very considerable importance, is a new method of casting every description of iron pipes, or tubes, invented and patented by Mr. J. Y. Stewart, of Glasgow (formerly of Montrose). Under the horizontal mode of casting, as usually adopted, it is impossible to avoid a greater or less degree of irregularity in the thickness of the metal, and in the internal cylindrical form of the tube. This is, of course, considerably modified, according to the skill and experience of the workman, but under no circumstances can he always be sure of the work turning out true. Mr. Stewart's plan is to cast the pipe, or other hollow cylindrical body, in a vertical position—to effect which, the mould consists of a perpendicular cylindrical iron box, of the required size, with a shaft in the centre longer than the mould, and communicating with machinery above, by which it is kept revolving, and as it revolves it gradually rises. At the bottom of this shaft is an instrument, which may be termed a "presser," or "rammer," consisting of an iron block, having inclined tubular faces of such smaller diameter than the box, as to leave the sand of the required thickness for the mould. On feeding the sand at the top of the box, it is distributed towards the sides, and the shaft and rammer, gradually revolving and rising, press it with great force against the sides of the box, leaving the mould of uniform density, and perfectly cylindrical throughout, ready for the insertion of the core. The amount of pressure given to the sand in the mould is regulated by a counterpoise weight. By this process of casting, a perfectly-formed pipe is obtained, whose inside and outside surfaces are truly concentric; and the machinery is so simple, that a boy can turn out six pipes, 6-in. diameter, per hour. There is no joint, or parting, of any kind in the mould, and, consequently, no ridges on the casting; less sand is used than by the old method, and, when cast, the tubes can be dressed at half the usual cost. Pipes, cast on this principle, present equal thicknesses of metal, uniform resistance to the pressure of fluids, and greater durability is the result. As the cost of casting on this plan is not more than by the old method, the economy in their use is very considerable; as, although the price per ton is the same, yet the lineal extent of a ton, with an equal strength of metal, being much greater, the purchaser has not to pay for irregular thickness and the usual protuberances. Profs. James Miller, of the Philosophical Society, Glasgow, and P. Wilson, Head Master of the Western College Institution, have reported highly favourably of the invention.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

TUESDAY.....	Wheat Butler Mining Company—offices, Liverpool, at Five A.M.
WEDNESDAY.....	Promoted Life Assurance Company—offices, at half-past One.
THURSDAY.....	National Bank of Ireland—offices, at One.
FRIDAY.....	Wheat Treasures Mining Company—at the mine, at One.
SATURDAY.....	Wheat Curts Mining Company—offices, at Two.
	Brighton Gas-Light and Coke Company—offices, at Twelve.
	West Cornwall Railway—King's Arms Hotel, Westminster.
	London, Brighton, and South Coast Railway—London Tavern, Twelve.
	Tontine Life Assurance Company—offices, at One.
	Crown Life Assurance Company—office, at Twelve.
	SATURDAY..... Birmingham, Wolverhampton, and Dudley Railway—Doe's Hotel, Birmingham, at half-past Two.

[The meetings of Mining Companies are inserted among the Mining Intelligence.]

THE PROVINCIAL BANK OF IRELAND.

The annual meeting of proprietors was held on Thursday, the 18th inst., at the office, Old Broad-street. There was a full attendance of proprietors—Sir JOHN YOUNG, Bart., M.P., was, on the motion of OLIVER FARRER, Esq., seconded by MOSES MONTEFIORE, Bart., voted to the chair.

The advertisement by which the meeting had been convened having been read by the SECRETARY, the CHAIRMAN said, he had great satisfaction in taking the chair on this occasion, and he was glad to see so full an attendance of proprietors. The first business of the meeting, after the election of a chairman, was to elect four directors, in the place of those who went out of office by rotation, according to the terms of the Deed of Settlement. The gentlemen going out of office in rotation this year, were Sir Robert Campbell, Bart., Oliver Farrer, Samuel Eustace Magan, and Joseph Mayer Montefiore, Esqrs. They had all been duly proposed as candidates for re-election, and their names had been put up in the office accordingly, and no other candidates had been proposed.—The re-election of the above gentlemen was, therefore, proposed and unanimously carried.

The CHAIRMAN said, the report which the directors had drawn up of the business of the bank for the last year, would now be submitted to the proprietors; and, with their permission, he would request the secretary to read it.

The report was then read. It was as follows:—

In conformity with their usual practice, before submitting to the proprietors a statement of the result of the bank's operations for the past year, the directors consider it proper to notice, very briefly, some of those circumstances, affecting the prosperity of the country, which must always have a material influence on the business and general interests of banking institutions.

The failure of the potato crop in the years 1846 and 1846, which was adverted to by the directors in former reports, has been productive of serious loss, and has tended greatly to disorganise and embarrass the trade and business of the country, affecting more immediately the owners and occupiers of land, but extending also to traders and others depending upon the prosperity of the agricultural classes. A considerable time must, it is feared, elapse, before the effects of that calamity can be overcome. It is satisfactory, however, to be able to state, that the harvest of last year was, on the whole, a productive one; and, being early, it was secured during most propitious weather, in excellent condition, without loss, and at moderate expense. The supply of food in the country has been therefore abundant; but as the prices of grain have been comparatively low, and the expenses of cultivation, including the public burdens upon land, have considerably increased, the circumstances of the farmers have not, it is believed, generally improved.

The flax crop of last year was a good one, and the produce of superior quality. The linen manufacture in the north of Ireland, to the importance and growing prosperity of which the directors have, on former occasions, referred with peculiar pleasure, has, however, partaken of the depression so universal in other departments of trade. In the report of last year allusion was made to the large imports and the high price of grain; and on this occasion the directors refer with regret to the disastrous consequences which resulted from the extended operations in that trade, into which so many persons were induced to embark.

Numerous extensive failures took place in England, and in Ireland and Scotland, and in subsequent to the month of August last year; and the pressure in the commercial world was altogether, for a time, of so serious and distressing a character as to have been considered without parallel.

Under such circumstances, the proprietors will not be surprised to hear that, notwithstanding all the precautions which could be taken, losses to a greater extent than ordinary have been sustained; but these, it is satisfactory to add, have been all provided for within the year; and, though there has been a diminution of general business, it is a subject of gratification to the directors, to have it in their power to present to this meeting a statement of the position of the accounts of the bank, which, they trust, will afford satisfaction to the proprietors. To that statement the attention of the meeting is now requested:—

The account submitted to the last yearly general meeting, in May, 1847, showed the amount of rest, or undivided profits, at March 27, 1847, to be £126,196 12 1. Out of which there was paid to the proprietors a bonus of 4 per cent., at Midsummer, 1847, amounting to 21,600 0 0

Leaving a balance of £104,596 12 1 And there has been further deducted the amount of two half-yearly dividends, paid to the proprietors as follows:—viz.:

At Midsummer, 1847	£21,600
At Christmas, 1847	21,600 - 42,200 0 0

Leaving a balance of the rest of last year amounting to £61,396 12 1 To which there has since been added the amount of net profits for the year ending the 25th, being the last Saturday of March, 1848, after deducting the property tax and all expenses, and providing for all bad and doubtful debts

Making the rest, or amount of undivided profits, at March 25, 1848, £107,696 10 11

The proprietors will observe, that, after providing for the losses of the past year, and the ordinary dividends on the capital stock of the bank, an addition has been made to the rest; and the directors have now to state, that it is their intention to pay, as usual, in July next, a dividend of 4 per cent. for the half-year ending at Midsummer, 1848, being at the rate of 8 per cent. per annum, or £1, on each 100. share, and 8s. on each 10/- share; and they purpose, also, as heretofore, to pay the property tax for the proprietors.

The report was exceedingly well received.

ARTHUR T. CORFE, Esq., of Salisbury, begged to move that the report be received and adopted, and printed for circulation among the proprietors. In doing so, he must take the opportunity of expressing his gratification, and not for the first or second time, at the admirable manner in which the affairs of the bank had been managed. (Cheers.) The best thanks of the proprietors were eminently due to the directors for having done so much during a year of such depression in all monetary transactions, and in which so painful a struggle had to be made by all persons connected with the mercantile world. He must repeat, it was a subject of congratulation that the establishment should, under the state of things to which he alluded, have been anything like so successful as it had been. (Cheers.)

Capt. ALFRED DAVIS, of Beauvoir, county Cork, had much pleasure in seconding the resolution.

The CHAIRMAN said, that with respect to what had fallen from Mr. Corfe, it was a matter of great congratulation to the directors and proprietors that, under all the trying circumstances of the last year, the bank had not only escaped without loss, but had realised a considerable profit; he would say, that on this subject he thought the directors had certainly some reason to claim credit, and also that they had reason to claim credit for the good management of the very efficient officers by whom their exertions had been so ably seconded. But, above all, he thought they had to thank themselves for the principle on which the business of the Provincial Bank of Ireland had been conducted, which was that of looking rather to sound and safe business than to large profits, with a greater degree of risk. He thought the bank had done as much good for the country in which the establishment existed as to itself, by introducing and adhering to sound and good principles of banking, which had stood the test of even the most adverse times. (Hear, hear.) The allusion which had been made in the directors' report, as to the condition of the agricultural classes and the depressed state of trade in Ireland, was, he thought, too true. The loss by the failure of the potato crop could not be estimated under a great many millions. This had, no doubt, injuriously affected every branch of commerce in Ireland, and some years would probably elapse before she entirely recovered from the consequences; but, having some knowledge of Ireland, he did not despair. (Hear and cheers.) He thought good would come out of evil; the agriculture of Ireland was rapidly improving. More scientific principles were gradually prevailing—a greater amount of capital was being applied to the improvement of the soil, and in a few years they would find all classes connected with the land extricating themselves from the difficulties alluded to. As to the effects of the Poor Law in Ireland, he would observe, that though great difficulties had been experienced in putting it in operation, and the new taxation it imposed pressed severely on many, yet he considered that its tendency would be to raise the social condition of the people of Ireland; and those who complained of the burdens which it had imposed, which were, no doubt, heavy, would find in due time a return in the more orderly and industrious habits of the people, who, being better housed, better fed, and better clad than they had been, would naturally labour more steadily and diligently than they could have been expected to do under the depressing circumstances of their former position. (Hear, hear.) And as they did so the resources of the country must augment; and from the operation of this measure, however trying at first, as well as of other causes now obviously in force, every class would derive benefit and ease, and order and tranquillity eventually take the place of suffering and discontent.

The resolution that the report be adopted, printed, and circulated amongst the proprietors, was then put, and carried unanimously.

Capt. DAVIS then proposed, that the cordial thanks of the meeting were due to the board of directors for their constant attention to the interests of the bank; and also to the chairman for his conduct in the chair.—W. LYNN, Esq., seconded the motion, which was carried unanimously.

The CHAIRMAN, on the part of his brother directors and himself, returned thanks.—Capt. T. PORTER, R.N., had the pleasure of moving a vote of thanks to Mr. Hewat and the other officers of the London establishment, and to Mr. Murray and the other officers in Ireland, as well as to the local direction, for their efficient and valuable services during the past year. He thought it was universally felt by banking persons that the Provincial Bank of Ireland manufactured men of business to establish and direct banks. (Hear.) Directors

might and did perform much for such institutions; but they must trust in a great measure to the ability and discernment of their secretary and other officers. (Hear.) He thought nothing could exceed the discernment and skill that had been displayed by the officers of this establishment. (Cheers.)—The motion having been seconded, the CHAIRMAN said, he had great pleasure in putting the resolution to the meeting.—The resolution was carried unanimously.—Mr. HEWAT returned thanks, and the meeting broke up.

STOCK EXCHANGE—RAILWAY SHARE TRANSACTIONS.

COURT OF COMMON PLEAS, MAY 15.

SAWERS v. LANGFORD.—This case is one of importance, not only with respect to the legality, or otherwise, of the transaction which gave rise to the action, but as being opposed to the rule generally, if not heretofore universally, observed, with respect to operations on the Stock Exchange. Mr. Cokethorn, Q.C., Mr. Grey, and Mr. Snow, appeared for the plaintiff, and Mr. Serjeant Bynde, and Mr. Jones, for the defendant. From the statement of counsel, and the evidence adduced, it appears that the plaintiff had employed the defendant in his capacity as a stockbroker, in some time transactions on the Stock Exchange, in consols for account, and as security, to meet any differences which might be against him (

HEALY FIELD LEAD AND SILVER MINES, in the parish of LANCASTER, in the county of Durham.—FOR SALE, by PRIVATE CONTRACT, the above-mentioned MINES, together with all the MACHINERY and MATERIALS therein.—These mines, which are held by lease from the Dean and Chapter of Durham, are now, and have been for many years past, in full course of working, and the produce has been considerable. The ore yielding a high per centage of lead, and from 20 to 25 ounces of silver to the ton. The mines are well stocked with water, and all machinery necessary for extensive operations, and the prospects for deeper and more extended trials are most encouraging.

The agent on the mines Mr. Wm. Forster, is instructed to render every facility and information to parties visiting the mines; and for further information apply to Mr. Eddy, of Grassington, near Skipton, in the West Riding of Yorkshire, who is authorised to treat for the same, and by whom satisfactory reasons will be given for the retirement of the present proprietors.—Dated May 18, 1848.

TO IRONMASTERS.—BRADLEY IRON-WORKS.—FOR SALE, BY PRIVATE CONTRACT, THE FORGE AND ROLLING AND SLITTING-MILL, at BRADLEY, near Bilston, in the county of Stafford, consisting of an excellent FORGE and MILL, lately erected; the former is worked by a steam-engine, of 32-horse power, and the latter by one of 80-horse power, with suitable and commodious OFFICES, WAREHOUSES, STABLING, and other conveniences.

The forge has a double cam ring, with two hammers; and the mill is capable, in its present state, of slitting and rolling every description of manufactured or malleable iron. The machinery is constructed upon the newest and most approved principle, and the whole is in perfect order and good working condition.

With the works, will BE SOLD a commodious WHARF and BASIN, on the banks of the Birmingham Canal; also, TWO DWELLING-HOUSES, suitable for the residence of managers.

The whole is at present held by Messrs. G. B. Thorneycroft and Co., under an agreement for a lease, which will expire at Midsummer, 1848, when possession may be had.

The tenants will show the works; and further particulars may be had from Mr. John Dunning, of Bradley; or at the offices of John Finchett Maddock, Esq., of Chester; or of Messrs. Wagstaff, Marsh, and Barratt, solicitors, Warrington.

TO BE SOLD, OR LET, a valuable COAL MINE, in the township of GREAT HARWOOD, in the county of Lancaster. The mine has been recently proved, and found to be a 3 feet 3 inches in thickness, and of excellent quality; it is commonly called, or known, by the name of the UPPER MOUNTAIN MINE, and extends over about 1000 statute acres, which will be divided into suitable lots.

The property is situated between the towns of Blackburn and Clitheroe, and is intersected by a branch of the East Lancashire Railway.

A section of the borings may be seen, by applying to Mr. Boosey, Rufford-hall, Ormskirk; or to Mr. Whittle, coal viewer, Charnock Richard, Chorley—to either of whom proposals may be sent.

IMPORTANT TO CAPITALISTS.—MINERAL FIELD AND VALUABLE FREEHOLD ESTATE, IN NORTHUMBERLAND, TO BE DISPOSED OF.—The COAL, LIMESTONE, and IRONSTONE, in the MANOR of HALTHWISTLE, and county of Northumberland, are hereby OFFERED TO BE DISPOSED OF, for the unexpired term of 34 years, with immediate possession.

This valuable royalty is very extensive, comprising upwards of 2500 acres—the greater part of which contains the aforesaid minerals. The Newcastle and Carlisle Railway (with a branch to Alston, now in progress, and commencing at the Haltwhistle Station, in the said manor) passes through the manor, and affords a ready and easy access to the shipping ports of Carlisle and Maryport, as well as to the important landane trade of Carlisle; also to Penrith, Kendal, Lockerbie, Ecclefechan, and the south-west of Scotland, by means of the Lancaster and Caledonian Railways.

The COALFIELD consists of upwards of 1500 acres of coal—nearly the whole of which is unwrought. The seam of coal, which is now being worked, at the Fell End Colliery, is nearly 4 feet thick—is a very good gas and coking coal, and well adapted for general use, being almost free from sulphur. From the peculiarly favourable formation of the surface, about 600 acres of coal may be won and drained, by means of a level, at a very trifling cost.

The IRONSTONE may be said to be almost inexhaustible, and has been proved to be of very superior quality, and will extend over nearly the whole of the manor. There is also reason to expect, that the black-band ironstone will prevail over the royalty, of a similar quality to that worked at Chesterwood, in the same range of strata.

The LIMESTONE comprises a breast of the "thick limestone," upwards of 1½ miles in length; and, from the thin rid, or baulk, may be worked and burnt at a low rate.—There are three kilns built, two of which are now in operation.

The FREEHOLD ESTATE, called CROSS-BANK FARM, consists of nearly 100 acres of arable, meadow, and recently enclosed land, and was purchased by the present lessee, to secure the important desideratum of a free way—leaving to join the Newcastle and Carlisle Railway, being the only part in the manor where this could be accomplished.

The whole will be found to be well worth the attention of capitalists, being one of the most valuable and extensive mineral fields in the north of England; and, from the great and increased demand for coke and coal on the west coast for landane and shipment, this royalty would realise, when opened out, the most sanguine expectations of mining adventurers embarking in the speculation.

For further particulars, apply to John Fawcett, Esq., Petteril Bank, Carlisle; and to Mr. E. R. Maddison, Haltwhistle, who has the plans and sections, and will show the premises.—Haltwhistle, May 3, 1848.

IMPORTANT TO CAPITALISTS.—TO BE SOLD, an excellent SLATE AND SLAB QUARRY—VARIEGATED MARBLE and HONE QUARRY—COOPER and LEAD MINES—all situated on the same property, within a short distance of the shipping harbour of Portmadoc, Carnarvonshire.

A GENERAL STATEMENT.

The above works are situated on a farm called Crossraw-uchaf, in the parish of Llanfrothen, in the county of Merioneth, about seven miles distant from the shipping harbour of Portmadoc, and about two and a half from the railway of the Festiniog Slate Quarries to the port. They are near the celebrated quarries of Festiniog, which are well known throughout Europe; and it hath been ascertained, by competent judges, that this slate vein is a continuation of the very productive vein worked by the Welsh Slate Company at that place, of which Lord Palmerston and other noblemen are partners, which send about 500 tons per week of fine slate to the market. The vein is about 70 yards wide, and very advantageous for working, being situated on the brow of a hill, and the rubbish thrown down, where there is a depository of 200 or 300 yards deep for it, without causing any trespass. The quality is good, splits well, and is of a beautiful blue colour.—Slates of the largest size are made from it, and slabs also, of large dimensions. Thousands of fine slates, worked to sizes, and beautiful slabs, are now ready on the bank.

The proprietor has ascertained most positively that no other slate quarries in Wales can produce such beautiful specimens from so near the surface, and where so little money has been expended.

The MARBLE and HONE adjoint the slate quarry, and some splendid specimens of variegated marble and hone have been already made from it.

THE COPPER and LEAD MINES are about a quarter of a mile from the slate quarry, and the metals are of superior quality, and likely to become very productive.

There is the greatest facility for carrying on operations at all the works, which may be done with little expense, as few or no machinery will be required. A sawing and planing engine may be worked by water, just below the quarry.

Satisfactory reasons will be given why it is sold.

For further particulars, and to treat for the same, apply (postage paid) to Mr. Richard Jones, printer and auctioneer, Dolgellau, North Wales, where specimens of the slates, marble, hone, copper, and lead, may be seen.

TO PROPRIETORS OF STEAM-ENGINES, STEAM-BOAT COMPANIES, &c.—THE SAVING OF FUEL at this moment an object of vast importance. M. REMOND, of 37, GREAT CHARLES-STREET, BIRMINGHAM, is ready to TREAT, on reasonable terms, with the OWNERS of STEAM-ENGINES for the application of his PATENTED IMPROVEMENTS, by which a great amount of fuel is economised, while, at the same time, more power is secured. The nature and extent of these improvements (which may be adapted at a comparatively small cost to any engine) were fully explained, and spoken of in the most favourable terms, in the *Midland Counties Herald* of the 30th of March—also in the *Mining Journal* of the 1st April—and they may be ascertained by a reference to Messrs. Beale, of Bradford-street, Birmingham, by whom they have been adopted with the most decided success.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th; and from Suez on or about the 10th of every month.

For rates of passage-money, plans of the steamers, and to secure passages, apply at the company's offices, No. 122, Leadenhall-street, London.

LAND DRAINAGE.—Mr. W. HUGHES, Civil Engineer, begs to announce, that he undertakes the INSPECTION of ESTATES to be DRAINED, the SETTING OUT of DRAINS, the RECLAMATION of LAND, and the GENERAL SUPERINTENDENCE of WORK, at a FIXED CHARGE PER ACRE, according to the extent of land.—Full particulars may be had on application to Mr. W. Hughes, C.E., at the office of the *Mining Journal*, 26, Fleet-street, London.

UNDER BRITISH AND FOREIGN LETTERS PATENT.—**TO CAPITALISTS—FIRST CLASS INVESTMENT.**—SHARES TO BE DISPOSED OF, in valuable patents, recently sealed, and in works connected therewith. The products of soft stone, chalk, and sand quarries, is durated and rendered impervious to wet, frost, vermin, &c.; also plaster of Paris, car-top sheeting, &c., for all building and other purposes.

Further particulars, and various specimens to be seen, at Messrs. Hutchison, Wilford, and Co., the patentees, East Temple Chambers, 2, Whitefriars-street, Fleet-street, London.

GADAIR MINING COMPANY.—At a Special General Meeting of adventurers, convened by circular, and held at the offices, 25, Fleet-street, on Tuesday, the 9th of May, 1848.

G. W. BLANCH, Esq., in the chair.

The minutes of the preceding meeting, with the subsequent proceedings of the finance committee, having been read, the following resolutions were carried unanimously:—

That the accounts, this day presented, be referred to D. L. Williams, Esq., and H. English, Esq., to examine and audit the same—whereupon they enter on the cost-book, and a printed copy thereof transmitted to each adventurer.

That, upon the representation made by Mr. James Truscott, of the expressed opinion of a majority of the adventurers that it was advisable the future business of the company should be henceforth conducted at the British Mining Offices, Manchester, such desire be complied with; and that the purser be authorised to give up the books and papers, on obtaining a receipt for the same.

That, with the view of liquidating the present outstanding claims, and also providing a fund for the prosecution of the workings of the mine, the adventurers be recommended to increase their interest, in the ratio of one additional share to every 10 at present held by them at par, and that they be invited to make such further increase as they may deem fit.

That the thanks of the adventurers are eminently due to the committee for the gratuitous services rendered by them in conducting the affairs of the mine.

That this meeting fully appreciate the services of Mr. Nicholas Truscott, in his office as purser, and express their acknowledgment of the same accordingly.

G. W. BLANCH, Chairman.

The cordial thanks of the meeting were unanimously given to G. W. Blanch, Esq., for his conduct in the chair.

BANWEN IRON COMPANY.—Established 1846—for WORKING the IRON MINES on the BANWEN ESTATE, in the neighbourhood of SWANSEA, Glamorganshire. The mines are now in work, and further CAPITAL being REQUIRED for erecting additional FURNACES, a portion of the reserved shares of £5 each may now be had, on application at the offices of the company. A deposit of £2 per share to be paid down, and the remainder by two instalments, at intervals of two months. This company offers peculiar advantages, and the profits are estimated to return a dividend of 5 per cent.

S. P. HARRIS, Secretary.
Offices, 23, Threadneedle-street.

CAMERON'S COALBROOK STEAM COAL AND SWANSEA AND LOUGHOR RAILWAY COMPANY.—Registered and Incorporated.

The directors are ready to RECEIVE TENDERS for LOANS, or bond, mortgage, or other securities of the company, in sums of £500 and upwards—repayable in three, five, or seven years, bearing interest at 5 per cent. per annum, payable half-yearly in London, or any of the principal towns in England or Scotland.

By order,
A. C. HOWDEN, Secretary.

Company's Offices, 2, Moorgate-street, London, May 18, 1848.

S. P. HARRIS, Secretary.

Offices, 23, Threadneedle-street.

CHARLES-STREET, ST. ROLLOX.

D. Y. STEWART & CO. beg respectfully to inform Merchants, Engineers, and Directors of Gas and Water Companies, that, having completed the erection of their works for the exclusive MANUFACTURE of CAST-IRON PIPES, are now prepared to enter into CONTRACTS for the SUPPLY of that ARTICLE.

D. Y. S. & CO., having no connection with any smelting-furnaces, can assure parties, that their pipes will be made from the best mixtures of pig-iron; and Stewart's Patent enabling them to make perfect moulds without any joint of PARTING, and the casting being performed while the mould is in a vertical position, ensure an equality of thickness of metal hitherto unattainable.—Glasgow, May, 1848.

THE PATENT OFFICE AND DESIGNS REGISTRY.—No. 210, STRAND, LONDON.

INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION of INVENTIONS and DESIGNS, with Reduced Scale of Fees.

Meiss F. W. CAMPIN and CO. offer their services, and the benefit of many years' experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute.

Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.

Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street).

BRITISH AND FOREIGN PATENT NAIL COMPANY.

(Provisionally Registered 7 and 8 Vic., c. 110.)

Established for the MANUFACTURE of every DESCRIPTION of NAILS necessary for house-building, shipbuilding, and coach-building, together with PINS, SPIKES, BOLTS, &c.—The object of this company is to carry out inventions in machinery, which has been fully tested, and found capable of producing NAILS of a quality equal to the best hammered nails, which can be sold by the company at a less price than the common cut nail. Specimens of the nails, and an estimate upon the working of the company's machinery—showing a dividend of 40 per cent. to the shareholders—may be examined at the offices of the company.

The shares of the company are £5 each, subject to the Parliamentary deposit of 6d. per share.—The calls will not, at any time, exceed 10s., and no call, after the first, will be made without two months' previous notice.

Applications for shares will, for a limited time, be received by the secretary, until the DEED of SETTLEMENT, which now LIES at the office FOR SIGNATURE, is filed up.

By order of the directors, T. PEPPER, Secretary.

Offices, 28, Surrey-street, Strand, London.

PATENT ALKALI COMPANY'S IRON PAINT.—This PAINT, now first offered to the public, is the PRODUCT of a PATENT PROCESS, and possesses VALUABLE and PECULIAR QUALITIES, not otherwise attainable.

Its colour is a purple-brown—it is perfectly innocuous—is far more durable than lead paint, and two coats are fully equal to three of any other paint. A single coat will be sufficient to demonstrate this. It dries rapidly, and its durability is very great.

From its chemical composition, it is especially, and above all other paints, adapted to covering iron: also wood, and stucco, or brick walls. The peculiar oxidation of the base of this paint makes it impossible that further change should take place in its composition. Its identity with iron secures it from galvanic action, so injurious to the durability of lead paints on iron work. It has been exposed on shipping to the action of seawater, and the sulphuretted hydrogen, so prevalent in sea-ports and tidal harbours, for three years, without change.

Its cheapness and strength render it admirably adapted for iron railings, farm buildings, and shipping. It will also cover creosoted timber. Price, by the ton, £20, delivered in London. All orders to be addressed to the offices of the company, 20, Fenchurch-street, London; where testimonials may be seen as to the value of the paint.

EVANS, BROTHERS, Agents.

IMPORTANT TO RAILWAY AND STEAM NAVIGATION COMPANIES, MANUFACTURERS, AND ENGINEERS.

W. BROTHERTON AND CO.'S

PATENT LUBRICATING FLUID (or Animal Oil) FOR ALL DESCRIPTIONS OF MACHINERY.

W. B. & CO. have the pleasure to state, that the above article is extensively used in her Majesty's Steam Navy, and by several of the principal Steam Navigation and Railway Companies, and is pronounced by them, and by the first practical engineers of the day, to be far better adapted for the purposes of lubrication than any other article hitherto used for such purposes. The Patent Lubricating Fluid is equally applicable for the most intricate and fine pieces of machinery, as for the heaviest bearings of the steam-engine. It is cheaper, much more economical, and cleaner than oils at present in use; is free from smoke, and calculated to effect a vast saving in the expenditure of working steam powers.

Further particulars can be had, and testimonials seen, by application to the manufacturers,

W. BROTHERTON & CO., Hungerford Wharf, Strand, London.

N.B.—The above article will burn in lamps, and give a light equal to the best sperm oil.

FOURDRINIER'S PATENT SAFETY APPARATUS, for PREVENTING ACCIDENTS IN MINES AND OTHER PLACES, WHEN THE ROPE OR CHAIN BREAKS.

By the ADOPTION of this INVENTION the LIVES of the WORKING MINERS may be PRESERVED, and the PROPERTY of the MINE OWNERS PROTECTED from the serious consequences of either of the following accidents—viz.:

1. From the men, or the load, being precipitated to the bottom of the shaft when the rope or chain breaks: in this case the apparatus is self-acting.

2. From either the men, or load, being drawn over the pulley: in this case, also, the apparatus is self-acting.

3. From the fearful consequences to men or load of a "whirl," or run: in this case, also, the result is equally certain.

A COAL PIT, with the SAFETY APPARATUS ATTACHED to the CAGE, is daily at WORK near BURSLEM, in the STAFFORDSHIRE POTTERIES.

To inspect the apparatus, or to obtain any further information, application may be made to Mr. Edward N. Fourdrinier, (the patentee), Cheddleton, near Leek, Staffordshire; or to Mr. Joseph Fourdrinier, 68, Arlington-street, Camden Town, London—who are prepared to GRANT LICENSES for the USE of